

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

Does the prevalence of poverty, religion or social capital
influence the prevalence of HIV?

Testing structural, cultural and institutional explanations of
HIV diffusion in South Africa

by

Janis Louise Kennedy
KNNJAN004

A minor dissertation submitted in partial fulfilment of the requirements for the
award of the
Degree of Master of Philosophy in Public Policy

Department of Political Studies
Faculty of Humanities
University of Cape Town
2006

Declaration

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signature _____ Date _____

Acknowledgments

Thank you to my faculty advisor, Associate Professor Robert Mattes, for his guidance and feedback on this research. Additional support was also provided by the Centre for Social Science Research and funding from the Andrew Mellon Foundation.

Thank you to my army of HIV/AIDS professionals, statistical consultants, and editorial advisors, especially Guy Harding, Meg Osler, Marc Malan, Stephen Kennedy, Barbara Schmidt, Aguil Deng, Steven Forsythe, The Centre for Early Childhood Development, Eliza Petrow, Mark Fivie, Lisa Schechtman and Suzi Peele. Your consideration, time and advice were greatly appreciated.

And most importantly, thank you to my friends and family, especially Aguil, Martin, Em, Mom and Dad, for your love, support, and sense of humour, through this slightly longer than expected process. Have I mentioned I am going for my PhD next?!

University of Cape Town

Abstract

South Africa has one of the highest HIV prevalence rates in the world, with an estimated 27.9 percent of the population infected by HIV in 2003 (Department of Health, 2003). What is driving this dramatic diffusion of HIV through the general population of South Africa?

As research on HIV/AIDS and prevention programmes accumulates, we have learned that

Preventive interventions focused upon changing individuals' behaviour through persuasion and better access to prophylaxis and care have had a limited impact. Increasing attention is now being paid to those social and cultural factors, symbols and processes which shape and provide meaning for human behaviour (Gillies and Tolley, 1996).

Qualitative studies have suggested that various non biomedical influences such as poverty, a decline in religious values or a lack of social cohesion increase vulnerability to HIV infection.

Unfortunately, political or economic agendas often shape policy decisions in the African context, rather than hard research findings (Colgan, 2005). Before poverty is blamed for high rates of HIV diffusion, or religiosity and social capital are heralded as the champions of HIV prevention, causal claims and prescriptions need to be systematically examined and tested. We need to identify priorities for HIV prevention through systematically gathered evidence from the field, rather than impressionistic, episodic analysis, or the political or economic agendas of governments or foreign health organisations. Thus, this study tests three broad sets of arguments about the driving forces of HIV/AIDS diffusion by:

- Logically specifying the key variables implicit in each explanation
- Identifying empirical indicators to measure each variable
- Testing which set of variables help us predict subsequent rates of HIV diffusion

I bring together in an original and unique database socio-economic, cultural, attitudinal and health indicators gathered in South Africa by the 1996 World Values Survey (WVS), the 1996 South African Census, and annual South African Department of Health antenatal clinic surveys. Survey data collected at the individual level is then aggregated up to the provincial level, the lowest level for which HIV prevalence data exists for the equivalent populations surveyed by the WVS and Census. I conduct bivariate analysis to determine the nature and strength of observed relationships between 1996 measures of poverty, religious values, and social capital, and HIV prevalence growth over 3 and 7 year periods after 1996 (the year the WVS and Census data was collected). For the independent variable, I used data reduction

methods where possible to construct and build broader, valid and reliable indices of poverty, religiosity and social capital in order to develop as parsimonious conclusions as possible.

Across South Africa's nine provinces, I find weak associations between indicators of poverty and certain types of social capital measured in 1996, and subsequent rates of growth of HIV prevalence. Yet, I found very strong associations between various elements of religiosity and growth in HIV prevalence. The evidence suggests that it is the organizational structures of religion and the value of religion in daily life that is associated with lower rates of HIV diffusion. It seems that religiously based social capital helps to monitor and enforce the social norms that discourage the behaviours and attitudes associated with HIV transmission. This suggests, in turn, that behaviour change interventions or campaigns aimed at reducing levels of HIV transmission could profit by taking advantage of the powerful social tools provided by religious organisations and the values they impart and enforce. While further research is needed, especially in testing these factors across smaller geographical areas (e.g. municipalities versus provinces, for example) and in other countries, this study suggests that the creation of religious social capital and support for faith-based organisations should be prioritised by policy makers.

Table of Contents

Acknowledgments	2
Table of Contents	5
Chapter 1: Introduction	7
<i>The Problem</i>	7
<i>Political and Theoretical Arguments</i>	8
Poverty	9
Religious Values	11
Social Capital	15
Chapter 2: Existing Evidence	19
<i>Poverty and HIV/AIDS</i>	19
<i>Religion and HIV/AIDS</i>	20
<i>Social Capital and HIV/AIDS</i>	23
Chapter 3: Research Design	28
<i>Research Methodology</i>	28
<i>Dependent Variable: HIV Prevalence Growth</i>	29
<i>Research Question and Hypotheses</i>	32
<i>Limitations of Research</i>	33
Data	33
Level and Unit of Analysis	34
Number of Cases	35
Chapter 4: Discussion of Socio-economics and HIV diffusion	36
<i>Key Concepts and Measures</i>	36
<i>Poverty in South Africa</i>	38
<i>Poverty and HIV Prevalence</i>	40
Chapter 5: Discussion of Cultural Values and HIV diffusion	43
<i>Key Concepts and Measures</i>	43
<i>Religiosity in South Africa</i>	46
<i>Religiosity and HIV Prevalence</i>	47
Chapter 6: Discussion of Social Capital and HIV diffusion	50
<i>Key Concepts and Measures</i>	50
<i>Social Capital in South Africa</i>	54
<i>Social Capital and HIV prevalence</i>	56
Chapter 7: Conclusion - A Call for Religiously Based Social Capital	60
<i>Summary of Findings</i>	61
<i>Implications</i>	62
Bibliography	64
Appendices	79
Appendix A: Framework of Five Theoretical Approaches	79
Appendix B: HIV Prevalence Growth Calculations, 3 year	80
Appendix C: HIV Prevalence Growth Calculations, 7 year	81
Appendix D: Poverty Indicators and Indices	82
Appendix E: Religiosity Indicators and Indices	84
Appendix F: Social Capital Indicators and Indices	87

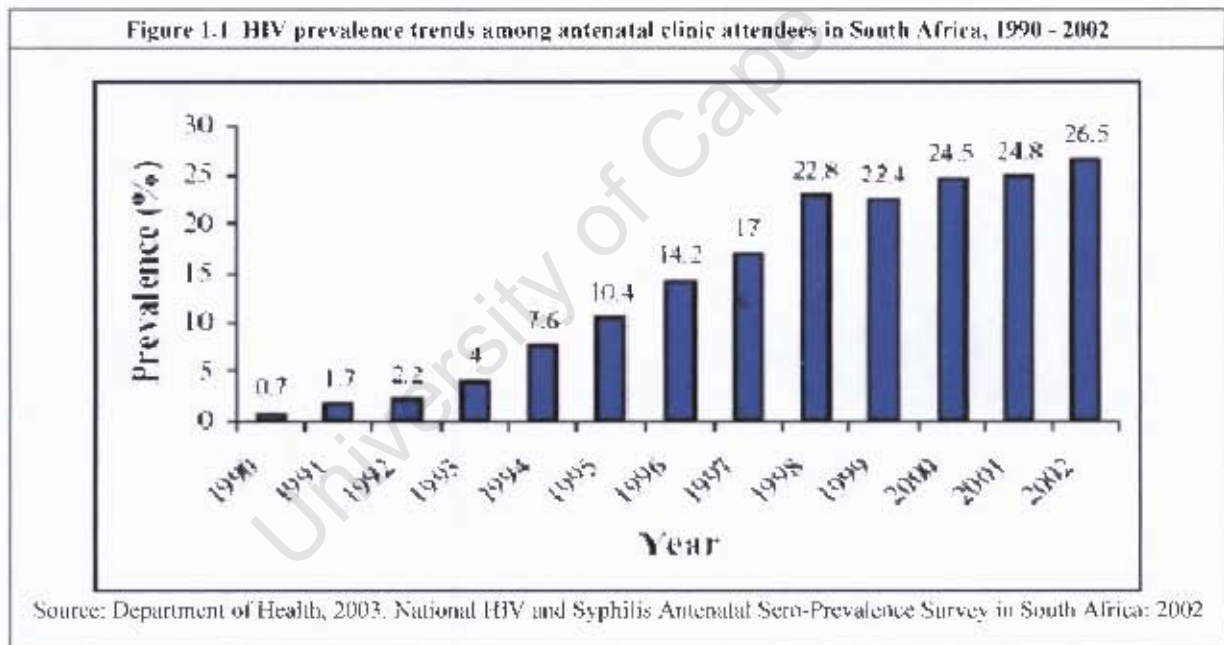
List of Acronyms

ABC	Abstain, Be faithful, or Condomise
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Clinics
ARV	Antiretroviral treatment
CBOs	Community-Based Organisations
CDC	Centre for Disease Control and Prevention
CHBC	Community/Home Based Care
DoH	Department of Health
EPMS	Extra- and pre-marital sex
FBOs	Faith-Based Organisations
GNP	Gross National Product
HCI	Household Circumstance Index
HDI	Human Development Index
HII	Household Infrastructure Index
HIV	Human Immunodeficiency Virus
HHS	US Dept. of Health and Human Services
HSRC	Human Sciences Research Council
IEC	Information, Education, and Communication
KZN	KwaZulu-Natal
MOH	Minister of Health
MTCT	Mother-to-Child transmission
NACOSA	National AIDS Coordinating Committee of South Africa
NGO	Non-Government Organization
NSP	HIV/AIDS/STD Strategic Plan for South Africa 2000-2005
PD	People's Dialogue
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PLWA	People living with HIV infection or AIDS
SAHPF	South African Homeless Peoples Federation
SANAC	South African National AIDS Council
SADC	Southern Africa Development Community
STDs	Sexually Transmitted Diseases
TAC	Treatment Action Campaign
TB	Tuberculosis
UNDP	United Nations Development Programme
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States AID
VCT	Voluntary HIV Counselling and Testing
WHO	World Health Organization
WVS	World Values Surveys

Chapter 1: Introduction

The Problem

While only ten percent of the world's population lives in sub-Saharan Africa, the region is home to almost two-thirds of all people living with HIV/AIDS (UNAIDS, 2004). Of the three million AIDS deaths in 2003, 2.2 million were in sub-Saharan Africa, while another estimated 3 million people in the region were infected (UNAIDS, 2004). South Africa has one of the highest HIV prevalence rates in the world (Department of Health, 2003). South Africa's pandemic is generalized (defined as more than 1% of the general population being HIV-positive), and the risk of infection has moved beyond historically high risk populations, such as "sex workers and their clients, men who have sex with men, and injecting drug users" (UNAIDS, 2004). The HIV prevalence rate grew from 14.2 percent in 1996 to 26.5 percent in 2002, as seen in Figure 1.1. What is driving this dramatic diffusion of HIV through the general population of South Africa?



There is consensus on the bio-medical causes of HIV infection. But the bio-medical paradigm alone can not explain the existence of different diffusion rates within the same countries or regions (Whiteside and Barnett, 2002). A growing body of evidence suggests that it is a "combination of socio-economic and biomedical factors with unsafe sexual practices that produces the lethal basis for the spread of HIV in Africa" (Nattrass, 2002). Several non-biomedical factors have shown to contribute to the spread of HIV in South Africa. Gender inequality (UNAIDS, 2004), migratory movements (Abdool Karim et al.,

1992), cultural sexual behaviours such as dry sex (Dorrington and Johnson, 2002), poverty (Maluccio and Haddad, 2003), a lack of social capital (Pronyk, 2002), and stigmatization (Campbell, 2003) have all been variously blamed for increasing individual and community risk and vulnerability to HIV/AIDS.

HIV/AIDS researchers contend that a “high risk situation is one characterized by “impoverishment and disenfranchisement, rapid urbanization, the anonymity of urban life, labour migration, widespread population movements and displacements, social disruption, [and] wars, especially counter-insurgency wars” (Zwi and Cabral, 1991; Dorrington and Johnson, 2002). The apartheid years saw the combination of many of these characteristics in the lives of many South Africans, especially in the early 1980s and 1990s; the same time period during which the HIV virus began its silent diffusion through the country’s population. Yet, the specification of these factors has not yet translated into successful prevention initiatives and a lowering of HIV prevalence in South Africa. Thus, a clear understanding of the non bio-medical causes of HIV diffusion continues to elude us. With escalating death rates (Statistics SA, 2005) and expected economic downturn due to AIDS, accurate identification of the structural, cultural or institutional factors driving the epidemic is urgently needed.

This thesis will test the impact of three broad sets of factors frequently identified in the HIV prevention debate: (1) socio-economic status, (2) cultural values and (3) social capital. Each has variously been seen either as a cause or deterrent. Thus, I assess whether socio-economic conditions (as measured by levels of poverty, education, literacy, employment, income, and access to resources), cultural values (as measured by levels of religiosity) or social capital (as measured by interpersonal and institutional trust, and active participation in networks and associations) influence HIV diffusion?

Political and Theoretical Arguments

Previous studies have variously explored the impact of widespread poverty (Stillwaggon, 2002), extreme social inequity (Gilbert and Walker, 2002), labour migration (Brummer, 2002; Abdool Karim et al., 1992), and gender (Ng’weshemi, 1997) on HIV/AIDS. Others have examined the influences of prevailing values and norms on sexual behaviour (Dorrington and Johnson, 2002). Still others have looked at social influences potentially

influencing behaviour, in the hope that the presence of factors like informed opinion leaders (Kasprzyk et al, 2005) or social capital (Campbell, 2003) will support HIV prevention.

I examine the three most often cited non bio-medical influences on HIV diffusion: poverty, religious values and social capital. I measure each, and then test their impact on growth in HIV prevalence. But before we move to issues of empirical measurement and testing, I outline each political and theoretical argument, and the logical reasoning that supports each.

Poverty

South African President Thabo Mbeki and his Minister of Health argue that extreme levels of poverty are the most important factors that increase the likelihood of HIV diffusion. Thus, the focus of HIV prevention initiatives in the late 1990s and early 2000s was placed on poverty reduction and increased nutrition, rather than voluntary counselling and testing (VCT) and antiretroviral (ARV) therapy. This approach ignored the possible impacts of cultural values and social capital. The Mbeki government only began to actively support ARV therapy in 2005, and only after being forced to do so by the South African courts and by international pressure to develop plans for national ARV rollout. Determined that ARVs benefits international capitalists who exaggerate the AIDS crisis for their personal and corporate gain, Mbeki has steadfastly refused to acknowledge the benefit of ARV treatment.¹ Instead, he has chosen to place “poverty at the heart of all South Africa’s health problems” and much to the world’s dismay, has argued that “a number of factors, including poverty, caused rather than exacerbated AIDS, and that HIV was not to blame” (Gumede, 2005). The Minister of Health claimed that “the underlying factor in the spread of infectious diseases including HIV and AIDS...is the poor conditions under which most of those who are infected and affected live” (Thshabalala-Msimang, 2004). Although there were many brave attempts by civil society and various AIDS councils to move the debate forward, these assumptions held by the government shaped much of the HIV/AIDS policy and national budget allocation throughout the 1990s.

The ANC/Mbeki argument relies implicitly on a socio-economic variant of a *structural approach*. The social structure approach assumes “that people’s values, preferences and

¹ This denialism is outlined in the March 2002 ANC discussion paper “Castro Hlongwane, Caravans, Cats, Geese, Foot and Mouth Statistics: HIV/AIDS and the Struggle for the Humanisation of the African,” which is the “strongest sustained argument in support of the Mbeki administration’s decision to delay the provision of ARVs to South Africans between 1999 and 2003” (Sitze, 2004).

behaviours are generally a function of their material, demographic or other life circumstances” (Mattes and Bratton, 2003). Poverty, class, residential location (urban or rural), urbanization, homelessness, gender, ethnicity and age are all possible demographic indicators of social structure; objective factors that shape subjective values, preferences and behaviours.

The ANC/Mbeki argument focuses most specifically on poverty. Poverty can break down social networks making communities more vulnerable to HIV (Gillies and Tolley, 1996). Harsh economic conditions drive people to migrant labour, which in turn breaks family bonds, disintegrates community networks, and disrupts the natural socialization of youth (Gillies and Tolley, 1996). Many people from the rural areas take up residence in urban squalor, in the hope of finding work in the city. There are high rates of unemployment in urban township areas, and although little research has been conducted to verify these claims, unemployment could directly increase HIV transmission because the unemployed have no access to workplace HIV prevention and awareness training, or free condom distribution and VCT, all of which are now offered by many South African employers (World Economic Forum, 2005). The unemployed also simply have more unstructured free time and with no disposable income, may turn more to sex as an inexpensive, pleasurable activity with which to pass otherwise boring, despairing hours.

Poverty affects women’s vulnerability in particular, as women often have less access to education, land, credit, cash and social services, and are forced without “viable means for independent economic survival in the best of times” to resort to “survival sex” as their only economic currency (UNICEF, 2005). Many women are forced to have sex with multiple partners, in order to provide themselves and their family members with food, money, clothes, shelter, or education (Schoepf, 1995). This economic dependency of women exasperates the “Sugar Daddy” phenomenon, where young women have sex with older men with the financial means to provide for them. This “age mixing” has resulted in girls contracting HIV at a much younger age than boys (UNICEF, 2005).

With little disposable income to spend on healthcare, and even less access to medical care services, poor communities may be more prone to undiagnosed illness. There is evidence that when sexually transmitted diseases (STDs) go untreated, the biological chances of HIV transmission occurring during sexual intercourse increase greatly (World Bank, 1997).

Furthermore, when a household lacks resources, exposure to unsanitary living conditions and water supplies is increased. This in turn, can decrease overall health and immunity.

When considered together, the living conditions and paucity of resources caused by poverty can decrease general health, and therefore increase the risk of HIV transmission. Thus, societies whose physical, emotional and social environments have been weakened by poverty may have more people forced into behaviours and situations that increase risk of HIV diffusion.

Religious Values

While the South African government advocates poverty reduction, some international health programmes are also turning to the church. HIV/AIDS initiatives financially supported by the United States are increasingly being implemented by religious organisations; with twenty-three percent of all groups receiving HIV/AIDS grants from the State Department being religious-based (Beamish, 2006). In his 2003 State of the Union Address, United States President George W. Bush pledged US \$15 billion to HIV/AIDS prevention, treatment and care in 15 of the most at-risk countries. An “aggressive five-year plan” with goals of “treating more than 2 million HIV-infected persons with effective combination antiretroviral therapy, preventing 7 million new infections, and caring for 10 million HIV-infected persons and those orphaned by HIV/AIDS”, the President’s Emergency Plan for HIV/AIDS Relief (PEPFAR) was approved by the US Congress in May 2003. All US funded HIV/AIDS activities in South Africa are now “being integrated into PEPFAR and are subject to the approval of the US Global AIDS Coordinator”, Ambassador Randall L. Tobias (USAID, 2005).

However, since its conception, PEPFAR has been widely criticized as a platform that advances a conservative, Christian ideological agenda, where programmes and organisations are funded if they emphasize prevention through the religiously-based values of abstinence, fidelity, mutual monogamy and delayed sexual debut over condom use (Beamish, 2006). It is widely felt that PEPFAR is “an ideological and religious message that ignores cultural norms, [and] root causes of HIV” and only allows for condom distribution to a narrowly-defined high risk group that does not include youth or unmarried people, and ignores the fact that it is natural human behaviour to have sex, and that the average age of sexual debut around the world is 17 (Schechtman, 2006).

This ideological basis is seen in PEPFAR funding allocations. At least “one-third of all [PEPFAR] prevention funds – nearly a billion dollars – must be spent on abstinence-until-marriage programs with no mention of condoms...[however] analysis of PEPFAR prevention funds awarded to date indicates that a *greater* percentage of funding is going to abstinence-until-marriage efforts” (Smith, 2004). In South Africa, FY 2005 PEPFAR programming, through small grants and new public private partnerships, will “expand prevention activities with a special emphasis on abstinence and ‘being faithful’ programs” (USAID, 2005).

As a result, secular humanitarian groups like CARE are concerned that organisations are receiving PEPFAR funding not because they have AIDS experience but because they are religiously-based (Beamish, 2006). And Human Rights Watch research shows that regardless of what prevention an HIV/AIDS organisation may find is working in their community, it is strongly felt by groups that “the more they talk about abstinence, the more they’ll get U.S. funding. And they fear that if they talk about condoms, they’ll lose funding” (Cohen, 2005). Furthermore, the judgemental attitudes toward premarital sex caused by abstinence-only messages, which link “pre-marital sex with immorality” is dissuading “young people, especially girls, from seeking health services and information” (Cohen, 2005).

The underlying philosophy of PEPFAR is based on the assumption that individuals who possess religiously-based values toward sex are less likely to engage in early and risky sexual behaviour associated with HIV transmission. Broadly speaking, this is an argument routed in a *culturalist approach* to exploring and explaining human behaviour. In contrast to the structuralist argument that behaviour and attitudes are shaped primarily by socio-economic condition, a culturalist approach argues that behaviour is driven primarily by socialized norms and values.

In general, religion is credited as being “good for you” because it limits bad, unhealthy behaviours (like drinking, drug use, stealing and other crime) while encouraging good, healthy behaviours (like self-love, socialisation, and kindness to others). “Participation in religious rituals can control personal behaviour by structuring an individual’s activities and networks, by increasing awareness of moral issues and appropriate values through religious teachings, and by limiting transgressions for fear of God’s “wrath as a source of anticipated punishment” (Rohrbaugh and Jessor, 1975). Religion serves “multiple and diverse

functions...from providing meaning to one's life, to yielding a sense of personal fulfilment, to securing access to social contacts and interpersonal relationships, to offering a set of standards against which to judge and guide one's actions" (Rohrbaugh and Jessor, 1975). For example, religion (Bourdillon, 1990):

- Helps unite social groups
- Supports the values and attitudes that keep a society working together
- Removes conflict in a community if it arises, and restores harmonious order
- Oversees rituals and rites of passage
- Provides identity (the sacralisation of identity) and other psychological needs to individuals
- Provides framework within which people make sense of world events around them

The relationship between religion and health may be of particular interest in Africa since in many traditional African religions disease is not just a physical condition, but a religious matter (Mbiti, 1974). In his introduction to traditional African religions, Mbiti (1974) writes:

...to deal with [disease] people revert to religious practices. They use religion to find out the mystical cause of the disease, to find out who has been responsible for it or has sent it to the sick person. They use religion to prescribe the right cure, part of which is often the performance of certain rituals that the medicine man may specify. It is also necessary to take counter measures to make sure that the cause of the disease is neutralized so that the person concerned will not suffer from the same disease again.

Especially when dealing with an epidemic like HIV/AIDS, communal health rituals are often created and carried out to protect the health of a given area (Mbiti, 1974). Here, communal religious belief and activity is upheld, valued and practiced in the interest of warding off disease and maintaining community prosperity.

"Religion has been an important force in human evolution even in the narrowest physical sense, by its prescriptions affecting reproduction" (Allott, 1999). "Religions establish the right and wrong conditions for conception to take place, the rights and wrongs of abortion and infanticide; they control adolescent sexuality, they regulate marriage, divorce, remarriage and widowhood" (Reynolds, 1992; Allott, 1999). A culturalist approach would argue that religion, regardless of denomination, shapes sexual behaviour as the values of and belief in "fidelity, mutual monogamy, sexual abstinence, and delayed sexual debut...are central values and norms of virtually all religions" (Green, 2003). These are also the sexual behaviours that, if adhered to, can decrease the risk of HIV transmission. Thus, if the culturalist approach is correct, communities with high levels of religious values and beliefs should exhibit lower numbers of sexual partner exchange, multiple partners and early sexual debut, and thus, lower rates of HIV diffusion and prevalence.

In addition to this possible influence of religious belief and value, research has shown that religious organisations themselves have the potential power to influence the behaviour and attitudes of their members (Takyi, 2003; Garner, 2000). Most religions of the world have strict rules and guidelines on sexuality and sexual behaviour, and communities dominated and monitored by faith-based organisations upholding these rules and guidelines may discourage the behaviours associated with increased rates of HIV transmission. Furthermore, “it is likely that...the network of relationships and church-based social ties could [encourage] the dissemination of AIDS information” (Takyi, 2003), whereby members of faith-based organisations may have more access to information on HIV prevention and treatment.

Thus, the more information and knowledge people have on how to protect themselves, and the more encouragement and support they are provided by the religious community around them to do so, the greater the likelihood that risky sexual behaviour will decrease, which in turn, lowers the chances of HIV transmission. Assuming that these religious values and the organisations that uphold them inspire people to adopt risk-reducing behaviours, religion and faith-based organisations could play a pivotal role in reducing HIV diffusion.

At the same time, there is reason to believe that strong religious values may fuel the AIDS pandemic. There is evidence that many people associate HIV/AIDS with a “wrong” sexuality; with the “the idea that AIDS was a curse from God when the spread of HIV was associated with [drug user] and gay sex” (Crawley, 2003). HIV-positive people are “often condemned as sinners, ostracized from their congregations, and refused funerals” (Crawley, 2003). In many religions, homosexuality and sexual promiscuity are considered sinful and immoral. “Muslims, Jews, Christians and other religions largely adhere to the ideal of sexuality as having its rightful place in lifelong marriage [where] strict norms about pre-marital abstinence and faithfulness in marriage arise” (Benn, 2002). HIV/AIDS has been “othered” by the “seemingly universal desire [of human nature] to divide between ‘us’ and ‘them’...no matter how HIV is transmitted, if you have it, you are unlucky, bad, condemned, different, marked, tested, documented – as over against the rest of us, the “good” ones” (John,1995).

Stigmatization and discrimination discourage the open discussion necessary for successful HIV prevention, treatment and care. If a religious community condemns HIV/AIDS because infection is assumed to come from sinful acts, those who are openly HIV-positive will be

stigmatized; those who do not know their status will fear getting tested because they do not want to be stigmatized; and those who are then HIV-positive but refuse testing will unknowingly infect their sexual partners, who will also unknowingly pass on the infection. This cycle of silent transmission could be further exasperated by the nine to eleven year lag time between initial HIV infection and the onset of AIDS in the absence of treatment (WHO, 2004).

And while many faith-based organisations are now working to combat HIV/AIDS, this was not always the case. Green (2001) claims that in the early stages of the AIDS epidemic, religious leaders were quick to “condemn those infected with the virus, calling the illness a divine curse. This attitude made AIDS shameful and a positive diagnosis difficult to disclose. Religion also systematically condemned certain modes of prevention [like condom use] as well as certain individual and group behaviours [like open discussion about sex with young people]” (Green, 2001). With over 80 percent of South Africans identifying themselves as Christians (Statistics SA, 1999), the possible consequences of such a silencing and stigmatizing attitude from organized religion has caused are alarming.

Social Capital

A third general argument about the impact of social capital on HIV diffusion has been advanced largely by academics. Because current HIV prevention initiatives appear ineffectual against escalating prevalence rates in many countries around the world, researchers are increasingly turning to social capital as the “magic bullet” for successful HIV prevention. Robert Putnam defines social capital as the “connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them” (Putnam, 2000). In contrast to the cultural values approach which focuses on the specific content of people’s norms and values, the *institutional* approach of social capital focuses on the interconnections amongst people regardless of what they believe or value.

A growing body of evidence suggests that social capital can increase a community’s general health (Wilkinson, 1996; Kawachi and Berkman, 2000; Rose, 1999; Holtgrave and Crosby, 2003). Kawachi and Berkman (2000) put forth several broad causal mechanisms as to why social capital and general health are linked:

- Social isolation has been linked to poor health and socially isolated individuals tend to live in areas low in social capital

- Social capital may influence healthy behaviours, in part, by reinforcing a culture that supports those behaviours
- Social capital may lead to the development of, and enhanced access to, healthcare services
- Social capital may foster mutual trust and respect leading residents of an area to take more responsibility for each other
- Social capital may facilitate egalitarian democratic political participation and thereby lead to the development of policies that protect all citizens.

Communities with little social cohesion lack the networks that form formal and informal mechanisms of social control and influence the frequency of economic opportunities (Wallace, 1993). The lack of these social networks can increase drug dependency, multiple sexual partner activity, limited access to resources and services, social discrimination and a lack of political power, all of which can increase vulnerability to the spread of HIV (Wallace, 1993).

Furthermore, academics argue that “people are most likely to undergo health-enhancing behaviour change if they live in communities that offer high levels of participation in local networks and organisations, which are associated with increased levels of trust, reciprocal help and support, and a positive local community identity” (Baum, 1999). Fukuyama (1995) argues that transactional costs are lower where there is mutual trust, therefore interpersonal trust encourages economic prosperity, and allows for a variety of social relationships to emerge (Fukuyama, 1995). As a result, cohesive communities with trusting members feel more empowered, effective and productive, which in turn, means they are more likely to adopt health-protective behaviours (Bandura, 1996; Israel et al, 1996; Campbell et al, 2002).

Thus, without these social networks and controls to facilitate normal and productive human socialization and development, people can become isolated, uneducated, economically dependant, and powerless within their own community. With little positive influence or social structure to negate destructive actions, these characteristics, in turn, could motivate negative attitudes and irresponsible behaviours like drug use or sexual abuse that could in turn increase a community’s risk to HIV diffusion. Communities with lower levels of trust and voluntary association membership may lack the social control and institutional power to encourage health enhancing behaviour. Therefore, it is hypothesized that areas with higher levels of social capital will be areas with lower levels of average HIV prevalence growth.

And, by “shaping social and cultural norms, promoting the exchange of social and material resources, and facilitating behaviour change through social support” (Pronyk, 2002), social capital can arguably promote the behaviour and attitude change needed for successful HIV prevention. Thus, many see the presence of social capital as a deterrent to heightened HIV transmission (Campbell, 2003; Pronyk, 2002), and are calling for the support of social capital creation in HIV prevention policy.

This argument is no longer restricted to academia. Increasingly, governments, such as South Africa’s Western Cape Provincial Government, employ social capital approaches to draw otherwise marginalized sections of society into planning and budgeting decision-making, acknowledging that the input from these groups are vital to popular democracy and development (UNCHS, 2000). iKapa elihlumayo, the growth and development strategy of the Western Cape government, upholds a vision of “A Home for All” and works to shift resources to areas with the greatest need in order to correct the historical imbalances between racial groups; imbalances that prevent communities from coming together and working for a common goal or good, because divided societies lack network infrastructure and mechanisms of social control (Wallace, 1993).

At the same time, not all forms of social capital may have this impact. Cultivating a culture of social responsibility and cohesiveness does not happen overnight, especially in areas dominated by migratory, poor populations. Recent work by the People’s Dialogue (PD) and the South African Homeless Peoples Federation (SAHPF), two organisations dedicated to promoting networks and reciprocal partnerships have both highlighted the complexities of cultivating social capital in South Africa. SAHPF found that its members were more concerned with personal gain and less likely to work for the benefit of the group. The “highly normative, universalising and prescriptive nature” of the definitions of social capital and civil society “not only fails to acknowledge the embeddedness of local hierarchies and patronage networks but it also ignored the possible political consequences of attempting to dislodge these local structures of power...There are difficulties involved in changing these ‘non-democratic’ and ‘non-liberal’ forms of internal organisation” (Robins, 2003). These undemocratic and hierarchical structures need to be recognized, especially when considering the “limited capacities of civil society to ‘scale up’ social capital under conditions of extreme poverty, unemployment, everyday violence and AIDS” (Robins, 2003).

Thus the logic surrounding social capital's influence on health, and specifically HIV/AIDS, is complex. Even if research does confirm a positive association between social capital and reduced HIV diffusion, further analysis would be required to ascertain exactly how and whether social capital can be effectively promoted, and whether social capital influences the behaviours associated with HIV transmission.

In summary, as distilled in Table 1.1, these three arguments (that poverty abets HIV diffusion, while religious values and social capital provide protection) are some that dominate the HIV prevention debate. I have now outlined the theoretical assumptions and logical backbone of each. I now turn to review available evidence on each, before discussing the methodology, design and findings of this study.

Argument/Claim	Assumption	Measurable Hypothesis
Poverty	Extreme poverty increases a community's risk to HIV/AIDS	A strong positive relationship between levels of poverty and subsequent rates of HIV diffusion
Religious Values	Religious attitudes, values and behaviour reduces community's risk to HIV/AIDS	A strong negative relationship between levels of religiosity and subsequent rates of HIV diffusion.
Social Capital	The presence of social capital decreases a community's risk to HIV/AIDS	A strong negative relationship between levels of social capital and subsequent rates of HIV diffusion.

Chapter 2: Existing Evidence

Now that I have laid out the main assumptions and underlying logic of the structural, cultural and institutional approaches to HIV diffusion, I turn in this chapter to review the existing evidence for each.

Poverty and HIV/AIDS

A wealth of studies has demonstrated that AIDS affects the economic well-being of individuals and communities burdened by the disease. In general, they have found that “HIV/AIDS contributes to a rise in poverty, and that poverty reduces the ability of the poor living with HIV/AIDS to cope with the disease. Moreover, AIDS generates new poverty as people lose employment and housing tenure. Household incomes fall due to loss of wage earners and rising spending, particularly on medical care and funerals” (UNDP, 2003). In South Africa, Bachmann and Booysen (2004) followed 400 households in the Free State for two years, 200 of which had an HIV-infected member, to analyse changes in income and expenditure. “Affected households’ real expenditure decreased over time, while real incomes did not, absolutely and relative to unaffected households...Households’ economies and HIV/AIDS were thus dynamically related, and occurred against a background of progressive poverty” (Bachmann and Booysen, 2004). Similar findings were also found by Woolley and Marshall (1994), Lipton and Ravallion (1995), Morris et al (2000) and Booysen and Arntz (2003).

However, little evidence exists about the inverse: whether poverty *contributes to* a rise in HIV diffusion. A study conducted in Seattle, Washington found that of the 3601 clients visiting the main HIV counselling and testing clinic, lower income people were more likely to be HIV-positive, even after controlling for other demographic and risk factors were controlled for through logistic regression. The authors concluded that the “impoverished are at increased risk for HIV infection due to the physical and social circumstances in which their poverty places them” (Krueger et al, 1990).

But Gillies and Tolley (1996) found a more complex relationship between poverty and HIV/AIDS in their 1996 study of 1991 AIDS prevalence and 1991 Gross National Product (GNP) per capita (US\$) in countries in the Americas, sub-Saharan Africa and Europe. They claim that poverty, regardless of “the number of sexual partners, age, race or injecting drug

use habits of individuals” proved to be a “significant factor in HIV infection in a developed country context” (Gillies and Tolley, 1996; Krueger et al, 1990). Statistically significant and positive association between AIDS prevalence and GNP were found in both Europe and the Americas. Yet, a negative (but statistically insignificant association) was found between AIDS prevalence rate and GNP per capita in sub-Saharan Africa, thus providing only tentative support for a direct association between poverty and AIDS globally (Gillies and Tolley, 1996). The researchers acknowledge that GNP is a “very blunt measure of relative poverty and affluence,” and point to the importance of expanding research on the influences of AIDS to include “those social and cultural factors, symbols and processes which shape and provide meaning for human behaviour” (Gillies and Tolley, 1996).

J.M. Wojcicki (2005) also found equally baffling associations in his systematic meta-review of studies examining the socio-economic status and HIV infection rate of women in Southern, Central and Eastern Africa. “In low-income sub-Saharan African countries, where poverty is widespread, increasing access to resources for women may initially *increase* risk of HIV or have no effect on risk-taking behaviours. In some parts of Southern Africa where per capital income is higher and within-country inequalities in wealth are greater, studies suggest that increasing socio-economic status may *decrease* risk” (Wojcicki, 2005).

Thus, more research is obviously required to unravel the complex and conflicting associations between poverty and HIV prevalence. With a greater variety of poverty indicators (e.g. household income and expenditure, household resource access, household circumstance (HCI) and infrastructure (HII) indices, and human development indices (HDI)) now available to researchers, a more complete and comprehensive test of poverty’s impact on HIV diffusion in South Africa can be conducted. Before the South African government blames the apartheid legacies of poverty and inequality for escalating HIV prevalence rates, and focuses on poverty alleviation in HIV prevention initiatives, the assumed causal relationship between poverty and HIV diffusion needs to be investigated much more thoroughly.

Religion and HIV/AIDS

Academics and health researchers have carried out a number of studies examining the influence of religion and spirituality on individual and public health (Egbert et al, 2004;

Koenig, 1997; Larson et al, 1998; Thoresen and Harris, 2002). However, in his systematic meta-review of literally hundreds of published empirical studies examining the relationship between religion and health, Levin (1994) finds that “there does appear to be an association, but [it is] not definitely valid, and there is only mixed evidence at the present time that this relationship is causal” (Levin, 1994).

In addition, several researchers have examined the influence of religious beliefs, values and activities on patterns of sexual behaviour (Allott, 1999; Zimmermann, 2004; Green, 2003; Richens et al., 2000). Micro-level studies in Africa yield a complex and varied picture, much like the one Levin (1994) offers in his review of religion’s influence on general health. In a survey study of 1,817 black South African first-year university students, Nicholas and Durrheim (1995) found that “religious commitment diminished propensity to engage in sexual intercourse, and delayed age for onset of sexual intercourse” (Nicholas and Durrheim, 1995). Yet, Garner’s 1998 study of the KwaZulu-Natal township of Edendale found that among members of different types of churches (Mainline, Pentecostal and Zionist-Apostolic), only membership in Pentecostal organisations significantly reduced the level of extra- and pre-marital sex (EPMS). The research showed that this was achieved through the maintenance of high levels of indoctrination (measured as the method and depth of the group’s educational programme), religious experience (levels of personal prayer, lay activity, and public worship), exclusion (level that outsiders encouraged become believers) and socialisation (involvement of church in members’ lives) (Garner, 2000). And in Ghana, self-identified Christian women did report higher levels of AIDS knowledge (compared to non-Christian respondents), but this did not translate into increased condom use or reduction in number of sexual partners (Takyi, 2003). This study suggests that while people may identify themselves as religious, and partake in regular religious activity, religiosity does not necessarily lead to the sexual behaviour upheld by religious doctrine (monogamy, delayed sexual debut, etc).

A growing number of HIV/AIDS prevention initiatives have claimed success in lowering HIV prevalence through approaches based upon conservative religious values and activities. In Zambia, USAID supported a mass media campaign that encouraged young adults to delay the onset of sexual activity, and to have fewer sexual partners. USAID claims this campaign, “which included television advertisements, radio spots, and an award-winning music video called ‘Abstinence is Cool’, contributed to a 42 percent reduction in HIV prevalence among

15- to 19-year-olds” (USAID, 2005). Here, the religious-based value of abstaining from sex until marriage has provided the basis for an HIV prevention campaign and is credited for lowering HIV prevalence rates.

But to what degree do the specific values of religion really control the daily behaviours and attitudes of members? In his analysis of the HSRC 2001 survey data, Rule (2002) found that the opinions and views of South African non-churchgoers do not statistically differ from those of churchgoers. Interestingly, he found that churchgoers “displayed somewhat less compassionate views” than non-churchgoers. Rule created a Christian belief index (CBI) with five statements² that “either contradict or confirm fundamental biblical principles about which Christians might be expected to hold orthodox views” on (Rule, 2002). While the bible (Exodus 20:14; Leviticus 20:10-20; Matthew 5:27-30; Matthew 15:19; 1 Corinthians 6:13; Ephesians 5:3) dictates that sex should only occur within marriage, 30 percent agreed or strongly agreed that premarital sex was permissible. Of those who identified themselves as Christians, only 16 percent received a maximum CBI score, suggesting that most Christians do not hold strictly orthodox views. And “those who claimed frequent attendance at religious meetings or services did not have significantly stronger levels of belief or commitment to the five principles of Christianity included in the CBI” (Rule, 2002). Rule’s findings suggest that religion does not dictate values or attitudes in a way that would bring about necessary changes in sexual behaviour, like delayed sexual debut, no premarital sex, and monogamy).

When considered collectively, these studies raise as many questions as answers. Thus, much more research is needed to test the association between religious values and HIV diffusion assumed by many international health organisations and donors (like PEPFAR, through which all US HIV/AIDS initiatives are funded).³ Most work on religion and HIV/AIDS in South Africa has been based on single case studies, where qualitative information is gathered from a specific population, in a specific place, and at a specific time. But we ideally need to

² The five statements respondents “strongly agree, agree, disagree, strongly disagree” with include: 1-Praying a lot is a waste of time. 2-Sex before marriage is permissible for Christians. 3-Jesus is the solution to all the world’s problems. 4-There is no life after we die. 5-A Christian is someone who is born again spiritually.

³ The President’s Emergency Plan for AIDS Relief is the US government’s comprehensive five-year global strategy for the global response to AIDS. This strategy came into effect in 2003, under the P.L. 108-25 The United States Leadership Against HIV/AIDS, Tuberculosis, and Malaria Act of 2003. Although there are 15 emergency plan focus countries, of which South Africa is one, all US Government funding for AIDS is coordinated through PEPFAR through various US Government agencies including: USAID, CDC, Department of Defence, Department of Labour (Office of the U.S. Global AIDS Coordinator, 2004).

test quantitative data from a cross-section of geographical areas and populations and over time. Such an analysis may unravel some of the current complexities surrounding religion's actual influence, if any, on sexual behaviour.

Social Capital and HIV/AIDS

Research increasingly demonstrates a strong relationship between levels of a broader concept called social cohesion and a population's health. Social cohesion relates to "the degree to which groups of people feel connected, share resources, and provide moral support" (Kawachi and Berkman, 2000; Reidpath, 2003). Social cohesion is defined as a willingness of people to voluntarily come together to cooperate and actively engage in formal and informal social networks, groups, associations and civic life. This active participation is based on and made possible by communal trust, reciprocity and shared values (Jackson et al, 2000). Cohesive societies are more likely to work together to enhance service delivery, information sharing and resource allocation, which in turn, increases the opportunities for and access to better general health (Kawachi and Berkman, 2000). Studies that demonstrate this finding include Whiteside and Barnett (2002), Durkheim (1952), Kawachi, et al (1997), Wilkinson, Kawachi and Kennedy (1998), and Reidpath (2003).

However, the present study focuses on social capital, a specific dimension of social cohesion (Jackson et al, 2000). At its core, social capital involves the benefits of personal trust, reciprocity and networks, or rather, "the web of cooperative relationships between citizens that facilitates resolution of collective action problems" (Brehm and Rahn, 1997; Coleman, 1990; Putnam, 1993). "Social capital theories focus upon the role of dense networks of associations generating social trust and institutional confidence" (Norris, 2002) that in turn, increase collective action and the functions of democracies.

Many researchers feel that trust is the crucial element for "enabling citizens to participate in public institutions, in the public interest and for the public good" (Chidester et al, 2003). Trust encourages people to work together more frequently, and these connections and the resulting interconnectedness of groups within a community results in increased prosperity of that community. For example, in southern Africa, the collective assets of social capital have developed among "women, people living in poverty, youth, ethnic minorities, and other socially excluded groups – often as a result of the solidarity and a shared identity brought about by exploitation" (UNCHS, 2000). Savings groups are a good example, where mostly

poor women have come together to save and lend small amounts of money, making social capital a means for economic survival. Often these groups transcend ethnicity, and develop solidarity networks that “merge faith, gender and economic survival with clan and familial identities” (UNCHS, 2000).

Social capital in the Africa context has been the topic of several studies. Shetler (1995) explored how the oral history tradition of the Kiroba people created social capital and helped retain cultural identity while many other African tribal identities were being lost in urbanization and westernization. Herriot et al (2002) suggested that increased social capital (measured by teacher support group membership) among Kenya’s primary school head teachers could be responsible for increased enrolment and student pass rates. Bird and Shepherd (2003), using data from three semi-arid rural Zimbabwean areas, examined how food security, education, health services, infrastructure, transport, migration and access to information influence the country’s poverty levels. They believe that a lack of natural, political, social and human capital will most likely make poverty in rural Zimbabwe chronic because there is little political and social commitment required to break the cycle of poverty (Bird and Shepherd, 2003). In South Africa, Moser (1997) examined the impact of apartheid on social capital, claiming that while apartheid “systematically destroyed many poor communities, eroding the stock of social capital...decades of poverty, persecution, and suppression associated with apartheid policy have consolidated ‘stocks’ of social capital. These reciprocal social networks are strongest at the inter-household level and in horizontally structured organisations” (Moser, 1997).

A “longitudinal and multidisciplinary study” of the changes in political opinion, attitude and behaviour of South Africans during the period 1994 to 2000 (Klandermans et al, 2001)⁴ found that “participation in every civil society organisation included in the survey⁵ increased trust in government, interest in politics, intention to vote, intention to participate in peaceful action, and the likelihood that someone would participate in collective action” (Klandermans et al, 2001). Furthermore, people were more likely to be embedded in civil society “if they had a higher living standard, were better educated, were employed rather than unemployed,

⁴ Entitled the “Social Movements in South Africa” project, this research was funded by the Free University in Amsterdam, the HSRC, the South Africa-Netherlands Programme on Alternatives in Development (SANPAD) and the University of Witwatersrand Political Science Department.

⁵ Findings based on regression analyses with summary measures from the eight organizations partook the entire time (1994 to 2000), the eleven since 1995, the fourteen since 1998 and the fifteen organizations since 1999. All of the regression analyses revealed the same pattern (Klandermans et al, 2001).

were male rather than female, and lived in the periphery rather than the centre⁶” (Klandermans et al, 2001). They also found that between 1994 and 2000, over 60 percent of South Africans were involved in grassroots, community based organisations (Klandermans et al, 2001).

However, while informative, many of these studies do not clearly define or operationalize social capital, and serve to add complexity to the already convoluted debate surrounding social capital as a necessary component of prosperous societies. Pioneers in the quantitative analysis of social capital include Narayan and Pritchett (1997), who used large scale survey and multivariate regression analysis to “measure the degree and characteristics of associational activity, as a proxy for social capital, and trust among households in rural Tanzania” (Narayan and Pritchett, 1997). Data focused on frequency of group membership and characteristics of these groups (for example, inclusive versus exclusive) as well as on attitudes concerning trust and social norms as surveyed in both the 1993 Human Resource Development Survey and the 1995 Social Capital and Poverty Survey (Narayan and Pritchett, 1997). They found that not only is social capital indeed both “social” and “capital” (both ultimately provide income) but that village-level social capital is an important contributor to household welfare. “Social capital is an important, and so far largely missing, dimension of income and poverty analysis. Poverty analysis that focuses exclusively on the ‘capital’ of individuals and ignores the local, community and social context could be missing a large part of the poverty puzzle” (Narayan, 1997).

A quantitative micro level cross-sectional panel study of social capital in South Africa from 1993 and 1998 (Maluccio, Haddad and May, 2000) explored the potential link between social capital (measured here by membership in formal and informal groups) and household welfare and trust. They examined “(1) the importance of trust in the decision to join groups; (2) the subsequent ability of groups to generate trust; and (3) the effect of group membership and trust on a measure of well-being, per capita household income” (Maluccio and Haddad, 2003). It was concluded that “(1) trust in local agents is an important determinant of membership in financial groups but does not matter for nonfinancial groups, (2) membership in both kinds of groups generates trust in nonlocal agents but not in local agents, and (3)

⁶ The HSRC research found significantly higher income levels and higher living standards in Gauteng and the Western Cape than in the remaining seven provinces. Therefore, Gauteng and the Western Cape were collapsed into what was “defined as the ‘economic centre’ of the country and the remaining provinces into a single category defined as the ‘periphery’” (Klandermans et al, 2001).

membership in financial and non-financial groups leads to higher well-being” (Maluccio and Haddad, 2003).

The link between social capital and health has been explored in numerous health related studies, including social capital’s role in patient-physician communication and confidence in the medical profession (Norris, 2002), health promotion (Hawe and Shiell, 2000; Edmondson, 2003), mental health (Caughy et al, 2003), mortality rates (Skrabski et al, 2003) and disease prevention (Campbell and Mzaidume, 2002).

Working in the United States, Holtgrave and Crosby (2003) conducted an aggregate level cross sectional study on social capital and sexually transmitted diseases. Utilizing measures of social capital (based on Putnam’s definition and measurement of social capital in the US)⁷, income inequality (calculated by state using data from the US Census Bureau’s 1996-98 Current Population Survey), and poverty (state government calculations of state’s population percentage living in poverty), they found that AIDS case rates across the states are negatively related to social capital and positively related to income inequality. In other words, “the more social capital, the lower the AIDS case rate: the more income inequality, the higher the AIDS case rate” (Holtgrave and Crosby, 2003).

In southern Africa, a team of researchers lead by Catherine Campbell have conducted the most comprehensive studies on social capital, and its potential impact on HIV prevalence. In South Africa, a survey, collecting both individual biomedical data (including tests of HIV, gonorrhoea, syphilis and Chlamydia) and social data (age, housing, associational memberships, sexual history, etc), was conducted in 1998 with a random sample of 1,211 residents aged 13 to 60 years living in Khutsong, a mining community township in the Carletonville district (Campbell et al, 2002). In Zimbabwe, a structured questionnaire (again capturing socio-demographic, associational membership and sexual history data) and HIV testing (where dipstick-dot immunoassay was used) was conducted between July 1998 and January 2000 with 9,843 adults, of which 2268 were women aged 15 to 24 years, living in Manicaland, the eastern province of the country (Gregson et al, 2004). Utilizing multivariate analysis, both studies found some significant relationships between organizational

⁷ Putnam has created a comprehensive social capital index that is meant to be a state level snapshot of social capital in America in the 1990s. Fourteen variables are measured, for example number of community organizations, involvement in public affairs, informal sociability and social trust. The index can be accessed at www.bowlingalone.com.

membership and HIV prevalence rates, but these relationships varied across age, gender and association type, displayed both positive and negative associations, and whose strength of association was greatly influenced by the perceived quality of the association's functionality (Campbell et al, 2002. Gregson et al, 2004).

In addition to these significant relationships, in South Africa, young women were significantly less likely to have had a casual partner in the last year if they belonged to a sports club or a youth group (often attached to a church) but more likely to have had a casual partner if they belonged to a stokel, a type of savings group (Campbell et al, 2002). On the other hand, men who belonged to a church were less likely to have had a casual partner in the last year, regardless of age (Campbell et al, 2002). As the presence of a casual partner increases the chance of HIV infection, it can be assumed that the HIV prevalence rate of the population with casual partners would, over time, increase faster than the HIV prevalence rate of the population without casual partners.

These studies present tantalizing evidence that justify a call for further research, with the acknowledgment and awareness that the "interface between HIV infection and social capital is a complex area that defies easy generalization" (Campbell et al, 2002). Furthermore, many of the studies conducted thus far on social capital's influence on HIV diffusion have been conducted in one community, thereby limiting the generality of findings in terms of location, context and time. More quantitative, cross sectional and time sequenced research is needed to unravel this mystery, so that we may gain a deeper and more general understanding of the influence of social capital on HIV prevalence in the South Africa.

Chapter 3: Research Design

Before we blame poverty for South African's high rates of HIV diffusion, or champion increased religiosity or social capital to promote HIV prevention, the underlying claims of causality need to be systematically examined and tested in the South African context. We need a systematic exploration of the influences of these non biomedical factors on HIV diffusion. Many HIV/AIDS prevention initiatives have proved ineffectual, possibly because their priorities have been falsely identified, foci misplaced and targets unknown. Prevention programmes should be driven by evidence from the field, and not the political or economic agendas of governments, foreign health organisations or academics.

Research Methodology

I provide what I believe to be a first attempt to do just that: to collect requisite data, measure a number of indicators deduced from each set of arguments (poverty, cultural values, and social capital) and test their relationship with actual subsequent diffusion patterns of HIV in South Africa. To do this, I developed a database of variables extracted from the 1996 South African World Values Survey and the 1996 South African Census, as well as the South African Department of Health's annual antenatal clinic (ANC) surveillance surveys measuring HIV prevalence, using the province as the unit of analysis. While measures of HIV prevalence through national population-based surveys have recently been made available⁸, HIV prevalence data exists mainly through surveillance systems focusing on pregnant women attending antenatal clinics (Boerma et al, 2003). Thus, HIV prevalence rates for each of the nine South African provinces for the years 1996 to 2003 are obtained from data gathered annually across public antenatal clinics since 1990. Accordingly, nationally representative survey data on poverty, religiosity and social capital gathered at the individual level through the 1996 World Values Survey and the 1996 Census are aggregated upward to the provincial level, facilitating a common unit of analysis for all variables.

Thus this original and unique database brings together indicators of poverty, religiosity and social capital on a common level and unit of analysis. The indicators were selected for inclusion in the database based on review of relevant academic literature (discussed in Chapter 1) defining and measuring these concepts. However, variable selection is ultimately

⁸ THE HSRC did complete a micro-level study of HIV Prevalence in 2002 and 2004. But, the HSRC survey did not include measures of religiosity or social capital. In addition, the HSRC survey and raw data were not publicly available at time of submission.

influenced by the availability of data. For example, while a comprehensive measure of social capital should ideally include how networks cooperate (Rose, 1997), the WVS data only addresses confidence and active membership in certain formal associations. Thus while I realize the need for better data with which to measure these factors, social capital in particular, I argue that the available data provide a reliable and valid basis from which to conduct initial tests of these factors and their potential relationship with HIV diffusion.

I then conduct bivariate analysis of the relationships between the different measures of poverty, religiosity and social capital across South Africa's nine provinces in 1996, and each province's *subsequent* HIV diffusion patterns (measuring average percent year-on-year growth), over 3 years (1997 to 2000) and 7 years (1997 to 2004). Pearson's correlation coefficients are calculated to measure the "the direction and strength of linear relationship" (Bohrnstedt and Knoke, 1988). A positive or negative sign attached to the coefficient indicates the direction of the covariation, with -1.00 indicating a perfect inverse association to +1.00 indicating a perfect positive covariation, and 0 indicating no relationship. It is important to stress here that "a causal relationship cannot exist between two variables unless they are correlated...A correlation is a necessary, but not a sufficient factor for a causal relationship to be inferred" (Kerr and Kozub, 2003).

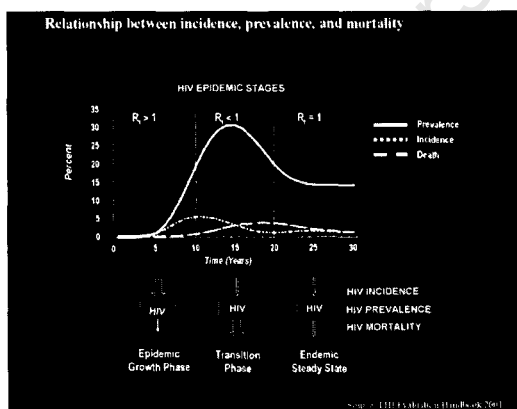
Where possible, I construct broader composite indices of poverty, religiosity and social capital, to provide a more efficient and parsimonious analysis of their influence on HIV prevalence growth. A valid measure is one where there is "correspondence between the measure and the concept it is thought to measure" (Johnson and Joslyn, 1995). Measures were chosen based on a review of the literature, in order to assure face validity. Secondly, whenever possible, I attempt to create broader composite measures that exhibit interitem correlation to assure reliability and construct validity.

Dependent Variable: HIV Prevalence Growth

I measure the dependent variable as the average annual growth of HIV prevalence in a province. I calculate two separate dependent variables, measuring average year-on-year HIV prevalence growth over 3 years, and 7 years after 1996, the year in which the independent variable data was gathered. The 3 year dependent variable measures average HIV prevalence growth from 1997 to 2000; the 7 year dependent variable measures from 1997 to 2004.

This gives the study an important time order dimension, where HIV prevalence trends can be examined over certain time periods after which the independent variables were measured. Thus, while the number of cases is relatively small, our ability to examine causal claims is strengthened by our ability to demonstrate time-order, a feature which is rare in the social sciences (outside of economics).

HIV prevalence is the percentage of a population estimated to be HIV positive, regardless of when the infection occurred (UNAIDS/WHO, 2002). Each year, the Department of Health surveys women attending “sentinel sites selected on the basis of a systematic random sampling in which weighting is conducted using the probability proportional to size (PPS) technique”. This ensures that first time attendees have the same probability of being sampled and provides “the basis for making other estimates and projections on HIV/AIDS trends” across the general population (Health Systems Trust, 2005; Makubalo et al, 1999). This method relies on an important assumption: that HIV prevalence in pregnant women correlates “well with prevalence in other adults (age range 15-49 years). This assumption has received some empirical support through direct comparisons of viral prevalence in the adult population and antenatal clinics within the same communities” (Boerma et al, 2003; Kwesigabo et al, 2000; Glynn et al, 2001).⁹



The *HIV incidence rate* is “the rate at which new events, or new cases, occur in a specified time in a defined population that is ‘at risk’ of experiencing the condition or event” (PHAC, 2002). It is hard to know exactly when HIV infection actually occurs and a variety of methods are currently being utilized by medical researchers to calculate HIV incidence rate. Most of these methods calculate

incidence using the HIV prevalence rate of the target year and up to five years past the target year.

⁹ See Whiteside et al, 2002, for a review of other problems with the sampling methodology used by the Department of Health.

Thus, “the value of antenatal clinic-based surveillance for HIV estimates is mainly in the assessment of trends over time” (Boerma et al, 2003). In other words, how quickly does the epidemic grow each year? As HIV prevalence data have been gathered annually at antenatal clinics since 1990, we are able to calculate the year-on-year percent increase in HIV prevalence for each province. This measurement demonstrates that the epidemic is growing at different rates in the different provinces.

In 1995, an estimated 9.3 percent of the country’s sexually active female population, age 15-49 years, was HIV-positive, with the lowest percentage in the Western Cape (2 percent) and the highest in KwaZulu-Natal (18 percent). The national estimated HIV prevalence rate grew to 13 percent in 1996 and then to 16 percent in 1997. The Western Cape remained the least affected province the following years, with 3 percent prevalence in 1996 and 6 percent in 1997. And KwaZulu Natal remained the worst affected with the highest estimated rates of 25 percent in 1996 and 27 percent in 1997.

Table 2.1 South African Provincial HIV Prevalence Estimates, 1994 to 2004

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Gauteng	6.4	12	15.5	17.1	22.5	23.9	29.4	29.8	31.6	29.6	33.1
Limpopo	3.0	4.9	8.0	8.2	11.5	11.4	13.2	14.5	15.6	17.5	19.3
Mpumalanga	12.2	16.2	15.8	22.6	30.0	27.3	29.7	29.2	28.6	32.6	30.8
North West	6.7	8.3	25.1	18.1	21.3	23.0	22.9	25.2	26.2	29.9	26.7
KZN	14.4	18.2	19.9	26.9	32.5	32.5	36.2	33.5	36.5	37.5	40.7
Free State	9.2	11.0	17.5	20.0	22.8	27.9	27.9	30.1	28.8	30.1	29.5
Eastern Cape	4.5	6.0	8.1	12.6	15.9	18.0	20.2	21.7	23.6	23.6	28.0
Western Cape	1.2	1.7	3.1	6.3	5.2	7.1	8.7	8.6	12.4	13.1	15.4
Northern Cape	1.8	5.3	6.5	8.6	9.9	10.1	11.2	15.9	15.1	16.7	17.6

Source: Department of Health, South African government, annual antenatal clinic (ANC) data, 2004

The average year-on-year increase in HIV prevalence is measured for two reasons. First, it measures the speed or velocity of HIV diffusion across each province. Epidemiological data shows that the AIDS epidemic not only began at different points but also progressed at different rates across South Africa’s provinces. For example, the number of reported AIDS cases in KwaZulu-Natal started to rise sharply in 1991, while this happened only in 1992 or 1993 in most other provinces. In July 1996, KwaZulu-Natal reported 5267 AIDS cases, more than twice as many reported in the second and third highest province, the Free State with 1124 cases and the North West with 1020 cases (Department of Health, 1997).

Secondly, there is a substantial lag time between infection with HIV and the onset of full disease or death. Without medical intervention, the average duration from infection to death is eight to ten year (WHO, 2004). While this average increases to between twelve and fifteen

years in resource-rich countries, in southern Africa, the average asymptomatic period is about seven years (Lifeworks, 2005). Given this incubation period of HIV (from infection to the onset of opportunistic infections and illness), many people carry the virus for several years without knowing. In addition, extreme stigmatization and limited access to testing, means that only ten percent of the estimated five million HIV-positive people in South Africa know their HIV-positive status (Lifeworks, 2005). Furthermore, the impact of social, cultural and structural conditions at a given point in time, will not simply have an impact within a few months, but will continue to influence behaviour over the next several years. Therefore, I measure average HIV prevalence increases for a 3 year and a 7 year period after 1997 to take into account the variation in epidemic growth rate across provinces, the influence of the lag time between infection and actual illness inspired testing on reported growth rates, and the need for an adequate time span to determine the long term implications of 1996 poverty, religion and social capital condition on HIV diffusion.

For the period 1997-2000 (3 Year Growth Rate), the average annual growth rate of HIV prevalence across the nine provinces was 2.2 percentage points. But there was a substantial variation ranging from 0.80 (in the Western Cape) to 4.10 (in Gauteng). Western Cape (0.80), Northern Cape (0.87), North West (1.60), and Limpopo/Northern Province (1.67) fell below this average. Gauteng (4.10), KZN (3.10), Free State (2.63), Eastern Cape (2.53), and Mpumalanga (2.37) were above this average.¹⁰ For the period 1997-2004, the average annual HIV prevalence growth was 1.60 percentage points, although smaller variation of 1.17 (in Mpumalanga) to 2.29 (in Gauteng). Again, above average provinces included Gauteng (2.29), Eastern Cape (2.20), and KZN (1.97). However, Mpumalanga (1.17) and Free State (1.36) joined the other below average provinces of North West (1.23), Northern Cape (1.29), Western Cape (1.30), and Limpopo/Northern Province (1.59).

Research Question and Hypotheses

We are now able to turn to our key research questions. Does the prevalence of poverty, religiosity or social capital influence the prevalence of HIV? I expect to observe the following relationships:

¹⁰ Please see Appendix B and C for these calculations

The social structural argument would predict that provinces with high levels of poverty would have higher levels of HIV diffusion. As a paucity of resources for and access to quality healthcare, good nutrition, and sanitary living conditions increases, and as more community members are forced by poverty to partake in behaviours that increase the chances of HIV transmission (i.e. the sugar daddy phenomenon), an increase of HIV diffusion in the community would be likely. Thus I expect to find strong positive relationships between levels of poverty and subsequent HIV diffusion.

In contrast, the cultural values argument would predict that provinces with high levels of religiosity would have lower levels of HIV diffusion. Religious values and the organisations that uphold them often have the power to strongly shape and influence human attitudes and behaviour. As many of these religious values advocate sexual behaviours associated with decreased HIV transmission (i.e. abstinence and fidelity) and as religious organisations encourage and monitor adherence to such behaviours, a decrease of HIV diffusion through a community dominated by religiosity would be likely. Thus I expect to find strong negative relationships between levels of religiosity and subsequent rates of HIV diffusion.

Finally, the institutional influences argument would predict that provinces with high levels of social capital would have lower levels of HIV diffusion. As levels of interpersonal trust, confidence in governing bodies, associational membership and trustworthiness grow in a community, so that community would be encouraged and capacitated to work together in the support, monitoring and dissemination of HIV preventative knowledge and behaviours. This collective action in the interest of communal health and prosperity would in turn decrease HIV diffusion through a community rich with social capital. Thus I expect to find strong negative relationships between levels of social capital and subsequent rates of HIV diffusion.

Limitations of Research

Before proceeding further, it is vital to acknowledge some of the weaknesses and limitations of the study's data and design.

Data

Antenatal clinic data “continues to be the single most important source of data in HIV surveillance” for countries with a generalized epidemic. Yet due to potential selection biases,

“extrapolations from ANC data to the general adult population should be made with caution” (Rehle et al, 2004). For example, based on antenatal data, the South African Department of Health “estimates that 5.6 million people were HIV positive at the end of 2003, of whom 55 percent were female and 96,228 were babies. In producing these figures, it is assumed that pregnant women accurately represented all women aged 15-49 years, that men were 85 percent as likely to be infected as women, and that 30 percent of babies born to infected mothers would themselves be HIV-positive” (Noble et al, 2005). But, ANC data may overestimate HIV prevalence in the young age group (15-19 years) because “at least in part, probably...not all young women are sexually active, and those represented in the antenatal data are by definition practicing unprotected sex which puts them at higher risk of HIV infection” (Noble et al, 2005). For additional criticism of antenatal clinic survey methodology, please see Whiteside et al, (2002).

This is why UNAIDS argues that the incidence rate may be a superior measure than the prevalence rate for tracking the progress of the AIDS epidemic (UNAIDS, 1999), but this would involve more effort in obtaining data from young women. “In countries with mature epidemics, and in which effective ANC surveillance systems are in place [like South Africa]...consideration should be given to over-sampling ANC attenders in the age-range 15-24 years” (UNAIDS, 1999). Current consideration of a second-generation HIV surveillance system, which links HIV surveillance and behavioural data collection together (Rehle et al, 2004), will improve the validity of HIV prevalence data. Unfortunately, this type of data has not been a focus of ANC surveillance systems in South Africa, so we must rely on provincial prevalence rates. Regardless of these limitations, the antenatal clinic survey does offer consistent and reliable data in showing trends in HIV prevalence growth, which is of most import in this study.

Level and Unit of Analysis

As pointed out earlier, although most of the data was originally gathered at the individual level, this study aggregates individual data upward to the provincial level. This is because HIV prevalence rates are only available at the provincial level. Thus, the provincial level is the lowest level for which data from the three main sources (WVS, Census and ANC prevalence) can be aggregated or disaggregated, while still capturing sufficient variability in life conditions, cultures and behaviours of the population in question. Admittedly, South Africa’s nine provinces are huge areas containing within them major variations of

urban/rural, race and social-economic status. Because all structural, cultural and social capital arguments tend to focus on how individuals are shaped by local economic, cultural and organizational conditions, more variegated measures with data collected at the community and neighbourhood level, not provincial, would be preferred. But, a provincial level analysis of these variables will be able to demonstrate relevant and potential relationships. Notwithstanding the need for better data collection of these indicators at community or individual levels, I believe that relationships between poverty, religion, social capital and HIV diffusion existing across South Africa's cities, towns and villages will, on average, be visible at the provincial level.

Number of Cases

Because there are nine South African provinces, there are only nine cases for this statistical analysis. With such a small number of cases, we increase the risk of one outlying observation affecting the variance explained and changing the entire observed relationship (Tufté, 1974). At the same time, these nine cases do constitute the totality (if from a high level of generality) of the South African experience. They are not the result of a selection bias of optimal cases to generate pseudo-relationships; a trick Yerushalmy (1953) warns researchers against in Tufté (1974). Thus, because correlation coefficients can be skewed or dominated by extreme outlying values when there are so few cases (Tufté, 1974), I will also visually analyze scatterplots of strong correlations to verify any findings.

Yet, given all of these limitations, this study is far more systematic than the great majority of qualitative and narrative based studies limited in scope by geography, region, age, race, ethnicity or gender that have thus far looked at the influences of HIV/AIDS in South Africa. I have also consciously designed the study to include strong elements of time-order, a key requirement of demonstrating causality that is often missing from standard cross-sectional quantitative studies. I have identified three competing theoretically guided sets of arguments, selected quantitative indicators guided by the theoretical background, and tested across all of South Africa's provinces. While these findings can be strongly suggestive, they will not be conclusive. For that, we would need to conduct tests across smaller geographic areas. This would allow us to go beyond bivariate analysis, and control for the simultaneous influence of third variables. However, as is, I hope this study will offer insight into the "big picture" of HIV diffusion in South Africa – a picture that will accurately inform and shape future HIV prevention policy.

Chapter 4: Discussion of Socio-economics and HIV diffusion

To restate, the social structural approach assumes “that people’s values, preferences and behaviours are generally a function of their material, demographic or other life circumstances” (Mattes and Bratton, 2003). While this approach concedes that people do make choices about their sexual behaviour, it contends that the scope of available choice is heavily circumscribed by social structure. In South Africa, poverty, class, residential location (urban or rural), gender, ethnicity and age, collectively or individually, are all possible demographic characteristics of social structure that shape values, preferences and behaviours. In this chapter, I examine the observed relationships between indicators of poverty and HIV prevalence to determine whether there is any evidence that social structure does indeed play any role in HIV diffusion in South Africa.

Key Concepts and Measures

There are competing definitions or measures of poverty and as of November 2004, democratic South Africa had not adopted any official definition of poverty (Noble et al, 2004). However, the government-commissioned Poverty and Inequality Report (PIR) sees “poverty as generally being characterised by the inability of individuals, households, or entire communities, to command sufficient resources to satisfy a socially acceptable minimum standard of living (May, 1998).

Thus, I collect data on household expenditure as well as other consensually accepted facets of poverty, specifically those related to the socially perceived necessities, possessions, and access to services (Noble et al, 2004). It turns out that these indicators create a broader composite Poverty Index, which complements the more traditional proxies of poverty, such as household income, expenditure and HDI. The Poverty Index measures include:

- Percentage of households with NO telephone/cell phone in the dwelling (Census 1996)
- Percentage employed people earning R500 per month or less by province (Census 1996)
- Percentage of households without toilet facilities (Census 1996)
- Percent in households with per capita monthly income <R250, 1996 (Census)
- Percent in households with per capita monthly expenditure <R250, 1996 (Census)
- Percent in households with per capita monthly income <R800, 1996 (Census)
- Percent in households with per capita monthly expenditure <R800, 1996 (Census)
- Percent of province population that is non-urban (Census 1996)

There are strong and relatively consistent correlations amongst these indicators. For example, the percentage of households with no telephone or cell phone in the dwelling has a correlation of 0.969 with the percentage of households with a monthly income <R250, and a

0.912 correlation with the percent non-urban population in a province. Therefore, the data can be reduced into a Poverty Index, to enhance the analysis of poverty's association with HIV prevalence.

	% households with NO telephone or cell phone in the dwelling	% employed people earning R500 per month or less by province	% households without toilet facilities	% Households With Per Capita Monthly Income <R250	% Households With Per Capita Monthly Expenditure <R250	% Households With Per Capita Monthly Income <R800	% Households With Per Capita Monthly Expenditure <R800	% Province Population that is Non- Urban	Poverty Index
% households with NO telephone or cell phone in the dwelling	1.000								
% employed people earning R500 per month or less by province	0.761	1.000							
% households without toilet facilities	0.622	0.427	1.000						
% Households With Per Capita Monthly Income <R250	0.969	0.800	0.728	1.000					
% Households With Per Capita Monthly Expenditure <R250	0.870	0.809	0.650	0.929	1.000				
% Households With Per Capita Monthly Income <R800	0.978	0.777	0.737	0.990	0.894	1.000			
% Households With Per Capita Monthly Expenditure <R800	0.732	0.783	0.519	0.768	0.890	0.764	1.000		
% Province Population that is Non-Urban	0.912	0.616	0.666	0.901	0.767	0.887	0.491	1.000	
Poverty Index	0.969	0.814	0.730	0.993	0.945	0.984	0.801	0.903	1.000

Statistics South Africa (Stats SA) turned to the United Nations Development Programme (UNDP) for another definition, which states that poverty is the “the denial of opportunities and choices most basic to human development to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-esteem and respect from others” (Hirschowitz, 2000; Noble et al, 2004). To measure this, the UNDP has developed the Human Development Index (HDI), which is a “measure of peoples’ ability to live a long and healthy life, to communicate, to participate in the community and to have sufficient means to be able to afford a decent life” (Stats SA, 2001). Using the UNDP formula, Stats SA calculated HDI scores nationally and for each province, for the years 1980, 1991 and 1996.

Lastly, based on 1996 Census data and the statistical technique of factor analysis, Stats SA created two other development indices similar to the HDI: the Household Infrastructure Index (HII) (related to “improving the quality of life of people by ensuring that their basic needs, for example, access to clean water, sanitation and basic education, are met” (Hirschowitz et al, 1998); and the Household Circumstances Index (HCI) (related to “giving people more empowerment, for example, through job creation and population development

programmes” (Hirschowitz et al, 1998). Each province received an HII and HCI score, which in turn ranks them according to their infrastructural development and skill training needs.

The Household Infrastructure Index includes the following variables:

- Living in formal housing (brick dwelling, flats, townhouse, backyard rooms, etc)
- Access to electricity for lighting from a public authority or supply company
- Tap water inside the dwelling
- A flush or a chemical toilet
- A telephone in dwelling or cellular telephone
- Refuse removal at least once a week by a local or district authority
- Level of education of household head
- Average monthly household expenditure

The Household Circumstance Index includes the following variables:

- Unemployment (expanded definition)
- Average household size
- Proportion of children in household under the age of five years

Thus, I include the 1996 HII and HCI provincial scores, calculated by Stats SA, in this analysis.

Poverty in South Africa

In 1996, the World Bank categorized South Africa as an upper-middle-income country with a medium human development index. Yet, a majority of South Africans were either poor or vulnerable to being poor, and “income and wealth distribution [was] among the most unequal in the world” (Gyekye and Akinboade, 2001). A comparison of data from Stats SA’s 1995 and 1999 October household surveys provides the following snapshot of socio-economic life in South Africa:

- The population grew from 40.6 million in 1996 to 43.3 million in 1999, with an estimated 78 percent African, 10 percent white, 9 percent coloured and 3 percent Indian.
- South Africa’s population has the structure of a developing country, with proportionately more young than older people.
- Although there is a relatively even split between urban and non-urban population, there is great variation by province, with 97 percent of Gauteng and 89 percent of Western Cape living in urban areas, as apposed to only 12 percent of Northern Province/Limpopo and 33 percent of Eastern Cape.
- While a vast majority of children (7 to 15 years) start school, completion of both primary and secondary school is rare, with even fewer people still attending tertiary institutions.

The Human Development Index¹¹ (HDI) for South Africa in 1996 was 0.69, comparable to Algeria (0.68) and Swaziland (0.66), though considerably higher than Niger (0.29) and Mozambique (0.34) but much lower than industrialized countries like Canada (0.94) (Stats SA, 2001). Furthermore, it is interesting to note that “the overall increase in the HDI was relatively large between 1980 and 1991, but only slight between 1991 and 1996. The change over time varied not only by province and population group, but also by the index’s components (longevity, educational attainment and income)” (Stats SA, 2001).

The 1996 poverty indices scores analyzed in this study are presented in the table below, and include HDI, the HII and HCI created by Stats SA, and the Poverty Index that I have created.¹²

	Gauteng	Limpopo	Mpumalanga	North West	KZN	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa
HDI 1996	0.82	0.47	0.69	0.54	0.60	0.66	0.51	0.83	0.70	0.69
HII 1996 ¹³	185.00	433.00	257.00	323.00	362.00	222.00	458.00	131.00	100.00	--
HCI 1996	216.00	344.00	210.00	196.00	397.00	152.00	400.00	115.00	100.00	--
Poverty Index	21.05	61.26	49.35	50.29	46.20	49.14	58.16	21.81	43.96	44.58

South Africa’s extremely unequal income distribution is visible across its provinces. Gauteng and the Western Cape are much richer than the rest of provinces, while the Northern Province/Limpopo and the Eastern Cape tend to be the poorest. In the HCI ranking, the Eastern Cape had the worst score, followed by KwaZulu-Natal and Northern Province/Limpopo. Although a wealthy province, Gauteng ranks fourth in the HCI, as large numbers of people move there in search of work, and the province has to provide for them. It is interesting to note that these are also the four provinces with the fastest growing average HIV prevalence rate over the seven year period after 1997.

Gauteng and the Western Cape have been consistently and significantly better off than the seven other provinces, with much lower percentages of their population burdened by low income and expenditure capabilities, unemployment, limited formal education and household

¹¹ “The Human Development Index (HDI) is used for obtaining internationally comparable indications of the ability of individuals within a country or across various countries to live long, informed and comfortable lives. It has three components: 1) longevity measured by life expectancy at birth; 2) educational attainment measured by adult literacy rate (two-thirds weighting) and 3) comfortable lives measured by a GDP index. The HDI is the average of these three components” (Stats SA, 2003).

¹² For more detail, please see Appendix D for provincial data on the individual Census and WVS measures that comprise each of these poverty indices.

¹³ These are the Stats SA HII and HCI scores obtained for each province, after number of households have been taken into account. For example, the HII shows that for every R100 that Northern Cape gets for infrastructure development, the Eastern Cape should get R458, KZN should get R32, etc (Hirschowitz et al, 1998).

resources. Conversely, a majority of communities in the Northern Province/Limpopo, Eastern Cape and Mpumalanga lack the basic resources associated with economic prosperity. For example, according to the 1996 Census, the percent of the population over 20 years of age with no education was only 7 percent in the Western Cape, and 10 percent in Gauteng, compared to 37 percent in the Northern Province/Limpopo and 29 percent in Mpumalanga. The percent of the population with a household income less than R250 a month in 1996 was 31 percent in the Western Cape and 34 percent in Gauteng, but this number jumps to 59 percent in the Northern Cape. Northern Province/Limpopo holds the highest percent, with 80 percent of its population with a monthly income of R250 or less.

There are also distinct differences in the levels of education, unemployment, income and living standard amongst the provinces, with the Western Cape and Gauteng consistently showing higher income and living standard levels than the other seven provinces.

When Gauteng and the Western Cape are collapsed into one category called the “economic centre” of the country, and the seven remaining provinces into one defined as the “periphery”, the clear and widening gap between levels of unemployment, education and living standard in the centre and the periphery is seen (Klandermans et al, 2001). They ascertain that over the transitional years of 1994 to 2002, “regularity in health has become less strongly related to one’s ascribed racial group, but more strongly to one’s age, gender and geographical location” (Klandermans et al, 2001). This divide is further demonstrated in urban and rural HDI calculations for 1996. Adult literacy rate was 94.51 percent in urban centres, compared to 76.36 percent in rural areas. Real GDP per capita (PPPS) was 9,023 in urban centres, and only 2,314 in rural areas. The urban HDI was 0.731, quite higher than rural HDI of 0.618 (Stats SA, 2001).

Poverty and HIV Prevalence

If the logic underlying the social structural approach is correct (and greater poverty increases a population’s risk to HIV diffusion), we should observe higher HIV diffusion in provinces that are poorer, more rural, and have less access to education, sanitation, communication and household expenditure.

But, we do not see this consistent empirical relationship between socio-economic conditions and HIV prevalence. In fact, the two “centre” or wealthy provinces face considerably different patterns of HIV diffusion. Consistently one of the provinces with the highest HIV prevalence rates since 1995, Gauteng experienced an average growth in HIV prevalence of 4.10 percent between 1997 and 2000, and 2.29 percent between 1997 and 2004. Conversely, the Western Cape has had the lowest annual HIV prevalence level in the country, and average HIV prevalence growth was 0.80 percent between 1997 and 2000, and 1.29 percent between 1997 and 2004.¹⁴ At least at first glimpse, it would seem that factors other than socio-economic condition, as measured by poverty, influencing HIV diffusion across South Africa.

But we need to go beyond a mere “eyeball” of the provincial distribution of the independent and dependent variables. Table 4.3 displays the bivariate correlations between the poverty indices and HIV diffusion. With one exception, all observed associations are weak. The HDI and the Poverty Index have weak association with average HIV diffusion over the 3 and 7 year periods after 1996. For the HDI, the correlation coefficient is 0.187 (for 3 years) and 0.241 (for 7 years). For the Poverty Index, the correlation coefficient is -0.128 (for 3 years) and -0.118 (for 7 years). Are these weak associations the result of the process of index construction, which masks the strong impact of specific aspects measured by single item indicators? A detailed examination reveals that the relationship between *all* the constituted single items that comprise the indices are often equally weakly related to HIV diffusion (please see Appendix D).

Correlations between average HIV prevalence are slightly stronger with the HII and HCI. The 0.659 correlation between 1996 Household Circumstances Index and 7 year average HIV prevalence growth is the strongest relationship. But I believe this relationship is observed because the indicators within the HCI are not all specific conditions of socio-economics. For example, family size and the number of children under five years of age may also be seen as cultural indicators. For example, Xhosa culture imports on the expectation of families with many children as a sign of prosperity and wealth (Mbiti, 1974). Thus, the index may be measuring cultural differences as well as economic disparities. More research is needed to understand why it has the only strong association with HIV diffusion amongst all the socio-economic indices.

¹⁴ For all provincial calculations and average scores, please see Appendices B and C.

Table 4.3 Socio-economic Indices Correlation With HIV Diffusion, 3 year and 7 year		
	3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004
Human Development Index by province, 1996 (Stats SA)	0.187	0.241
Household Infrastructure Index, 1996 (Stats SA)	0.241	0.398
Household Circumstances Index, 1996 (Stats SA)	0.443	0.659
Poverty Index	-0.128	-0.118

But, we have seen repeatedly that provincial economic status as measured by socio-economic status of households, access to infrastructure and services and their monthly expenditure, have no or weak relationships with subsequent average HIV prevalence. While the relationships between the Stats SA indices (HII and HCI) and HIV prevalence are slightly stronger than those observed between HDI and Poverty and HIV prevalence, none are strong or consistent enough to support a socio-structural explanation of HIV.

In conclusion, there is little evidence that communities' structural socio-economic conditions are driving HIV diffusion. I now turn to other possible cultural and institutional factors that could influence an change in community HIV prevalence rates.

Chapter 5: Discussion of Cultural Values and HIV diffusion

To restate, the cultural values theoretical approach argues that key human behaviours are driven primarily by deeply held socialized norms and values. Harrison and Huntington define culture as “the values, attitudes, beliefs, orientations, and underlying assumptions prevalent among people in society” (Harrison and Huntington, 2000). Furthermore, they say “culture matters”. While researchers and public health institutions, like the World Bank and USAID, have focused on “informing decision makers about the cultural realities that would have to be reflected in the design of policies and programs and in their execution...few interventions were designed to promote cultural change, and indeed the whole idea of promoting cultural change has been taboo” (Harrison and Huntington, 2000). But a change in culture may be exactly what is needed if the battle against AIDS in South Africa is to be won. I will focus specifically on religious culture for two reasons. First, South Africa is an extremely religious society. Second, religious values are likely to be one of the most relevant aspects of culture for understanding HIV/AIDS because of the role of religion in shaping norms and sexual behaviours. Thus, in this chapter, we explore culturally embedded religious beliefs, values and activities that may influence a community’s risk to HIV diffusion.

Key Concepts and Measures

French sociologist Emile Durkheim defined religion as “a unified system of beliefs and practices relative to sacred things, that is to say, things set apart and forbidden – beliefs and practices which unite into one single moral community called a Church, all those who adhere to them” (Durkheim, 1915).

Individual religious values have been operationalized in numerous ways, with the frequency of religious attendance being the most popular measure (Levin, 1994). But as our knowledge about different religions and religious practices increases, the operational measurement of religiosity has also expanded. Religion’s influence on daily, secular life and the participation in ritual practices (such as prayer or attendance at services) are now part of a “multidimensional view of religiosity, one which acknowledges the centrality of religious beliefs or ideology but which encompasses other aspects as well” (Glock and Stark, 1965;

Rohrbaugh and Jessor, 1975). This study explores this multidimensionality by creating several indices that each captures a different aspect of religiosity.

Religion involves both beliefs (an ideology that shapes our thinking and understanding of the world and life around us) and symbols, “which gather together a variety of ideas, particularly in symbolic action or ritual” (Bourdillon, 1990). Beliefs are religious statements that “are believed to be true because religious actors have had social experiences which corresponding to these beliefs, provide them with face validity” (Banton, 1966). To explore the extent to which a religious belief systems influence certain behaviours, this study uses the World Values Survey (WVS) series of question items on religious beliefs to measure the proportions who accept the following seven religious beliefs:

- Percent who believe in God (WVS, 1996)
- Percent who believe in life after death (WVS, 1996)
- Percent who believe in People have a Soul (WVS, 1996)
- Percent who believe the Devil exists (WVS, 1996)
- Percent who believe in Hell (WVS, 1996)
- Percent who believe in heaven (WVS, 1996)
- Percent who believe in Sin (WVS, 1996)

In order to develop a broader, reliable construct of religious beliefs, I examined the interitem correlations between the seven indicators. Because there is strong association between the seven beliefs measured, a reliable Religious Beliefs Index can be calculated.

Table 5.1 Interitem Association of Religious Belief Indicators and Index

	% Believe in God	% Believe in life after death	% Believe People have Soul	% Believe in Devil	% Believe in hell	% Believe in heaven	% Believe in Sin	Religious Beliefs Index
% Believe in God	1.000							
% Believe in life after death	0.277	1.000						
% Believe People have Soul	0.109	0.567	1.000					
% Believe in Devil	0.082	0.524	0.083	1.000				
% Believe in hell	0.105	0.543	0.357	0.237	1.000			
% Believe in heaven	0.789	0.475	0.055	0.355	-0.021	1.000		
% Believe in Sin	-0.353	0.307	0.347	0.112	0.680	-0.393	1.000	
% Religious Beliefs Index	0.184	0.842	0.533	0.647	0.798	0.285	0.629	1.000

Another aspect of religiosity concerns the role religion plays in people’s everyday life. Seven questions in the WVS addresses this part of religious culture, and this study captures the proportion of respondents most influenced and guided by religion in daily life.

- Percent who mention “religious faith” as “important” for children to learn at home (WVS, 1996)
- Percent who consider “religious faith” as “most important” thing for children to learn at home (WVS, 1996)
- Percent who say religion is “very” important in life (WVS, 1996)
- Percent who “yes” get comfort and strength from religion (WVS, 1996)
- Percent who have confidence in churches “a great deal” or “quite a lot” (WVS, 1996)
- Percent who identify themselves as “religious person” (WVS, 1996)

- Percent who raised in a religious home (WVS, 1996)

As with religious beliefs, strong and consistent interitem correlations allow me to construct a broader, reliable scale of religious saliency with which we can use to conduct a more parsimonious analysis of any link between religious values and HIV/AIDS.

Table 5.2 Interitem Association of Religious Saliency Indicators and Index

	% mention "Religious Faith" as "Important" for children to learn at home	% consider "Religious Faith" as "Most important thing" for child to learn at home	% Say Religion is "Very" important in Life	% "Yes" get comfort and strength from religion.	% have Confidence In Churches "A Great Deal" or "Quite A Lot"	% Identify themselves as "Religious Person"	% Raised in Religious Home	Religious Saliency Index
% mention "Religious Faith" as "Important" for children to learn at home	1.000							
% consider "Religious Faith" as "Most important thing" for child to learn at home	0.803	1.000						
% Say Religion is "Very" important in Life	0.633	0.732	1.000					
% "Yes" get comfort and strength from religion.	0.633	0.417	0.661	1.000				
% have Confidence In Churches "A Great Deal" or "Quite A Lot"	0.528	0.747	0.765	0.558	1.000			
% Identify themselves as "Religious Person"	0.685	0.730	0.823	0.600	0.493	1.000		
% Raised in Religious Home	0.429	0.613	0.456	0.261	0.439	0.592	1.000	
Religious Saliency Index	0.829	0.907	0.918	0.696	0.822	0.852	0.614	1.000

A final aspect of religiosity concerns membership and participation in religious structures, which is separate from and not necessarily related to the values and motivations behind the actions. This study captures the percent of those most active and participatory in religious organisations, as measured by these two WVS questions:

- Percent who attend religious services once a week (WVS, 1996)
- Percent who are active members of a church or religious organization (WVS, 1996).

Again, because there is a strong correlation between the two measures (0.78), I have constructed a reliable composite measure of religious activity with which to test the impact of religion on HIV diffusion.

Table 5.3 Interitem Association of Religious Activity Indicators and Index

	% Go to Religious Services Once Week or More	% Active Member: Church or religious org	Religious Activity Index
% Go to Religious Services Once Week or More	1.000		
% Active Member: Church or religious org	0.778	1.000	
Religious Activity Index	0.952	0.933	1.000

At this point, it is important to note that active membership in a religious organisation can also be seen as a key measure of social capital and part of an institutional argument that will be tested in the next chapter. Therefore, this particular index will be analyzed in both chapters

with careful attention paid to its absolute correlation with HIV change, but also how its impact compares to other cultural or institutional measures.

Religiosity in South Africa

Religion and religious institutions are predominant features in most African societies, and South Africa is no exception (Chidester, 1992; Afolayan, 2004; Prozesky and deGruchy, 1995). In 2001, over 90 percent of South Africans claimed religious affiliation (World Values Survey, 2001). In 1996, a large majority of South Africans, regardless of the province of residency, told WVS interviewers that they were “raised in religious homes” (89 percent), regularly “attend religious services once a week or more” (61 percent), “identify themselves as religious persons” (83 percent), “get comfort and strength from religion” (89 percent) and are “active members of religious organisations” (65 percent). Between 1994 and 2000, an average of 60 percent of the South African population was involved in grassroots organisations, with about half participating in just one organization, usually church-based (Klandermans et al, 2001).

A HSRC 2001 Public Opinion Survey found that 83 percent of South Africans claim membership to a Christian church. Of this, the break down is (Rule, 2002):

- 10% Zionist Christian Church (Z.C.C.)
- 9% Methodist Church
- 9% other Zionist type Christian churches
- 8% Roman Catholic
- 8% Nederduitse Gereformeerde kerk (Dutch Reform Church)
- 8% Apostolic Faith Mission
- 6% Anglican denominations
- 9% Non-Christian
- 7% No member in formal religion

Across the nine provinces, a majority of people value religion, hold deep religious beliefs and are active in faith-based organisations. However, the provinces with the highest levels of religious belief are not the provinces with the highest levels of religious saliency or religious activity. With a national average of 72 percent, the import of religion in daily life ranges from the highest in the Northern Cape (85 percent) to the lowest in the KwaZulu-Natal (63 percent). Levels of religious belief are strong across the board, with a national average of 81 percent, and only an 8-point variation ranging from a high of 88 percent in Western Cape to a low of 75 percent in Mpumalanga. There is much greater discrepancy between levels of

religious activity, ranging from a high of 79 percent in the Northern Cape to a low of 39 percent in KwaZulu-Natal.

KwaZulu-Natal exhibits the most interesting set of religiosity index scores. It has one of the highest religious belief index scores (80 percent), and yet, the lowest religious saliency score (63 percent) and the lowest religious activity index score (39 percent). It seems that while a vast majority of the population there hold deep religious beliefs, this does not necessarily translate into equally high levels of religiously driven lifestyles or activities. KwaZulu-Natal has the highest HIV prevalence rate in the country (40.7 percent in 2004 (Department of Health, 2004), and one of the fastest growing epidemics (with an increase of 4.10 percentage points between 1996 and 1999¹⁵). Descriptive analysis of this data suggests the presence of deep religious beliefs is not associated with lower HIV diffusion; however, the data also suggests a potential relationship between a lack of religious saliency and activity and increased HIV diffusion.

Table 5.4 South African Provincial and National 1996 Religious Indices Scores

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (mean)
Religious Saliency Index	68	70	72	72	63	77	70	74	85	72
Religious Beliefs Index	78	86	75	81	80	78	81	88	77	81
Religious Activity Index	55	62	62	65	39	77	63	66	79	63

Religiosity and HIV Prevalence

Table 5.5 shows the bivariate correlations between the three religious indices, and HIV diffusion. The first thing to note is that all the signs (except a 0.011 correlation between religious beliefs and 7 year on year increase) are negative. Regardless of its type, religiosity in 1996 is associated with lower levels of subsequent HIV diffusion. However, the actual context of people's beliefs is less important than personal religious saliency and activity. The negative correlation between Religious Beliefs Index and HIV diffusion (-0.436 over 3 years and 0.011 over 7 years), is rather weak when compared to the negatives correlations between religious saliency and HIV diffusion (-0.640 over 3 years and -0.628 over 7 years). This suggests that the dominance of strong religious belief does not influence behaviours associated with reduced risk of HIV transmission. This could explain why, even though South Africa is considered a "religious society" (with ninety nine percent of the population

¹⁵ For provincial HIV prevalence rate increases over 3 and 7 years, please see appendix.

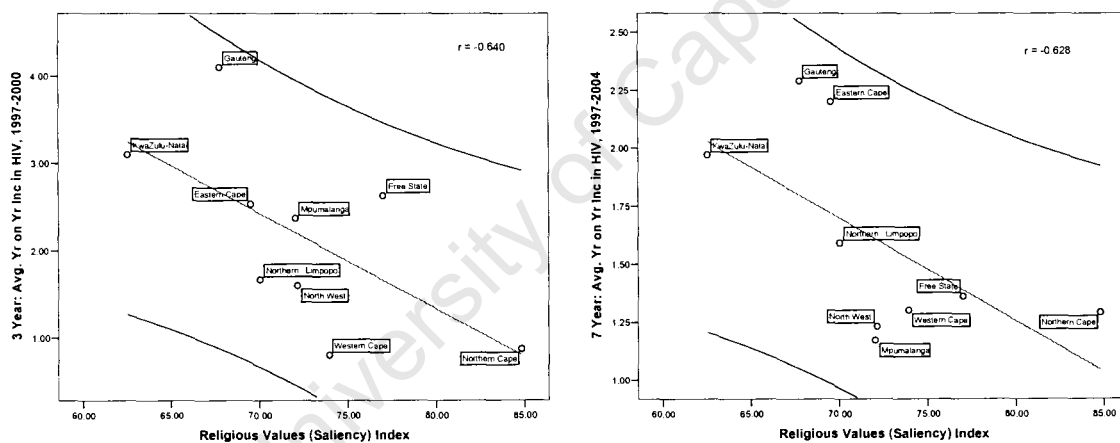
believing in God), the HIV prevalence rates is still so high. Sexual behaviour especially that associated with increased HIV diffusion seems not to be greatly influenced by religious beliefs.

Table 5.5 Religiosity Indices Correlation with HIV diffusion, 3 year and 7 year

	3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004
Religious Beliefs Index	-0.436	0.011
Religious Saliency Index	-0.640	-0.628
Religious Activity Index	-0.553	-0.571

However, a much stronger relationship is observed between religious saliency and HIV diffusion (-0.640 for 3 years and -0.628 for 7 years). This suggests that where religious values are considered very important, and provide daily guidance and strength, average HIV prevalence growth is low. Communities where people take strength from religion may also be communities that are more likely to monitor and discourage the risky sexual behaviours associated with HIV diffusion. These strong, negative relationships are seen in the following scatterplot graphs:

Figure 5.1 Religious Saliency Index and HIV diffusion Scatterplots



A strong and negative relationship is also found between the Religious Activity Index and average HIV prevalence growth (-0.553 over 3 years and -0.571 over 7 years). This again suggests that the structure provided by religious activity and the social monitoring that occurs as a result of that participation serve to limit risky sexual behaviour. Communities in which a majority of members attend and are active in religious organisations may be more likely to encourage sexual behaviours and attitudes associated with HIV prevention, i.e. monogamy, fidelity, delayed sexual debut, abstinence and dissemination of HIV/AIDS information. Thus, together, these associational relationships suggest that a religious community that monitors the behaviours of its members, *and* upholds the religious values discouraging

certain HIV risk enhancing sexual activity, seems to benefit from lower HIV prevalence rates over time.

These findings uncover an interesting relationship between religion and HIV prevalence across South Africa's nine provinces. There is a strong and consistent negative relationship between many of the individual religious indicators and average HIV prevalence growth.¹⁶ These strong negative relationships are observed with the Religious Saliency Index and Religious Activity Index, suggesting that in provinces in which religious values are very important in daily life and participation in religious organisations and activities is high, that HIV prevalence levels are lower, and the epidemic grows more slowly. This evidence is consistent with a cultural explanation of HIV diffusion. In turn, this offers support to the argument that religious based organisations in South Africa may be well-positioned to drive HIV prevention initiatives.

¹⁶ Please see Appendix E for correlations between the individual religiosity indicators and HIV diffusion.

Chapter 6: Discussion of Social Capital and HIV diffusion

As discussed in Chapter 1, the institutional influence approach sees attitudes and behaviours “as a consequence of the organizing principles of formal and informal institutions” (Mattes and Bratton, 2003). Membership and participation in society’s formal and informal institutions may encourage trust, further civic participation and confidence in systems that ultimately work and provide for a more efficient, healthy and cohesive society. This willingness to cooperate (measured by levels of interpersonal trust, confidence in institutions, respect for diversity, and an understanding of reciprocity) and participate (measured by levels of associational membership, networking and voluntarism) are the basic components of social capital (Jackson et al, 2000).

There is a growing body of evidence and consequential debate on the contribution that social capital can make to a community’s general health (Kawachi and Berkman, 2000; Rose, 1999; Holtgrave and Crosby, 2003; Barnett and Whiteside, 1999). Furthermore, there is a mounting argument that social capital might decrease the spread of HIV/AIDS by “shaping social and cultural norms, promoting the exchange of social and material resources, facilitating behaviour change through social support, and generating a collective response to the epidemic” (Pronyk, 2002). The networks, support systems, interpersonal trust and societal cohesiveness generated by social capital could, in other words, channel HIV prevention knowledge and cultivate an environment that encourages sexual behaviours associated with reduced HIV transmission. This chapter explores whether there is any empirical support on which to base this argument. Do communities rich in social capital (as measured by levels of interpersonal trust, associational membership, institutional confidence, and trustworthiness) exhibit lower rates of HIV diffusion?

Key Concepts and Measures

Social capital consists of the “connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them” (Putnam, 2000). Social capital is a community characteristic, “an aggregate concept that has its basis in individual behaviour, attitudes and predispositions” (Brehm and Rahn, 1997). Social capital “is a relational phenomenon that can be the property of groups, local communities, and nations, but not individuals” (Norris, 2001). In Norris’s memorable turn of phrase: “We can be rich

or poor in social capital, I can't" (Norris, 2001). Therefore, measures of individual behaviours and attitudes from the 1996 WVS and South African Census can and should be aggregated upward to create provincial measures of interpersonal trust, institutional confidence, active membership in associations, and trustworthiness.

There has been much research and debate on how to standardize the definition and measurement of social capital (Putnam, 2001; World Bank, 2003; Maluccio and Haddad, 2003; Stone and Hughes, 2002). This is, in part, because social capital varies "in type and may manifest in different ways in different settings" (Stone and Hughes, 2002).¹⁷ This study adopts a measurement model made popular by Paxton (1999), Knack and Keefer (1997) and van Schaik (2002). It includes four core dimensions of social capital: general (or interpersonal) trust, institutional trust (confidence in public institutions), active associational membership (local and national organisations), and perceived trustworthiness (or reciprocity).

General or interpersonal trust is defined as "a standing decision to give most people – even those whom one does not know from direct experience – the benefit of the doubt" (Rahn and Transue, 1998). Social capital theory distinguishes between three types of trust: trust within established relationships and social networks, general or "social trust" extended to strangers, and trust in governing institutions (Stone, 2001).

The World Values Survey (WVS) indicators measures social trust with the question "Generally speaking, would you say that most people be trusted, or that you can't be too careful in dealing with people?" (WVS, 1996) As there is only one WVS question tapping general trust, no index is possible. But, this isolated measure of trust has been analyzed in isolation in other social capital studies (Norris, 2002), and is considered a reliable though imperfect measure of trust.

The WVS measures institutional trust with a series of questions that tap respondents' confidence in a range of public institutions. Questions on institutional confidence are "likely to provide an accurate thermometer of public life" as institutions performing well elicit citizen confidence while those performing badly generate distrust and low confidence

¹⁷ Several good reviews of the debate on the conceptualization and measurement of social capital have been published. Further information on social capital conceptualization and measurement can be found in Wall et al (1998), Harper (2001), Macinko and Starfield (2001), Productivity Commission (2003), and Paldam (2000).

(Norris, 2002). For this study, the percent of respondents who answered they have “A Great Deal” and “Quite a Lot” of confidence in the following institutions is analyzed.

- Percent who have confidence in the national government (WVS, 1996)
- Percent who have confidence in the legal system (WVS, 1996)
- Percent who have confidence in Parliament (WVS, 1996)
- Percent who have confidence in civil service (WVS, 1996)

Strong and consistent interitem association between these individual indicators gives us confidence that the items reliably measure the same underlying concept. Therefore, they can be compiled into an index.

	% Who have Confidence in Nat. Govt	% Who have Confidence in Legal System	% Who have Confidence in Parliament	% Who have Confidence in Civil Service	Institutional Trust Index
% Who have Confidence in Nat. Govt	1.000				
% Who have Confidence in Legal System	0.660	1.000			
% Who have Confidence in Parliament	0.949	0.798	1.000		
% Who have Confidence in Civil Service	0.951	0.658	0.915	1.000	
Institutional Trust Index	0.974	0.796	0.985	0.959	1.000

Active participation in associations is also an indicator of social capital. As more people engage in social networks, so reciprocal relationships are built and interpersonal trust generated (van Schaik, 2002). Networks enabling these opportunities may be formal or informal, bonding or bridging, big or little, disperse or dense, all of which “are likely to effect the flow of resources and the nature of social capital available through a network” (Baum and Ziersch, 2003). Although admittedly not a conclusive measure of the networks presence is a community, the WVS does capture the percent of active membership in several types of institutions, with the question, “From this list of voluntary organisations, are you an active, inactive or not a member of each?”

In this study, associational membership is divided into three groups, depending upon the type of organisation. This distinction is made because motivation for joining and resulting participation in each is very different. Local, secular organisations, like sports, art, music and educational groups, are analyzed together as associations that cement close ties within a community, known as bonding social capital. Larger, nationally structured, secular associations, like labour unions and political parties, foster bridging social capital, where members often network outside their immediate communities.¹⁸ And, as active membership

¹⁸ The WVS also measures membership in environmental, professional and charitable organisations, but it is unclear how these groups are defined by respondents, and on average, less than 10 percent of respondents in

and participation in religious organisations is an institutional construct as well as a cultural, the Religious Activity Index, described in the previous chapter, comprises the third type of organisation. As there is strong interim association between indicators within each group, indices for local and national membership can be created. For interitem association between religious activity indicators and index, see Chapter 5.

Table 6.2 Interitem Association of Local Membership Indicators and Index

	% Active Member: Sport or Rec org	% Active Member: Art, Music, Edu. org	Membership Index - Local
% Active Member: Sport or Rec org	1.000		
% Active Member: Art, Music or Edu org	0.699	1.000	
Membership Index - Local	0.920	0.923	1.000

Table 6.3 Interitem Association of National Membership Indicators and Index

	% Active Member; Labour union	% Active Member; Political Party	Membership Index - National
% Active Member; Labour union	1.000		
% Active Member; Political Party	0.599	1.000	
Membership Index - National	0.893	0.895	1.000

Trustworthiness or norms of reciprocity describe “the provision of resources by an individual or group to another individual or group, and the repayment of resources of equivalent value by these recipients to the original provider” (Baum and Ziersch, 2003). Reciprocity does not assume equal “tit-for-tat” repayment; rather it is the idea that somewhere down the line, someone, maybe even a stranger, will repay your good deed in one way or another (Newton, 1997). Here, the norms of reciprocity are based on mutual trust (van Schaik, 2002). Trustworthiness is the “willingness to put the group’s or someone else’s interest ahead of pure individual interests” (van Schaik, 2002). Trustworthiness is also associated with a willingness to adhere to and believe in the norms and expectations of civic law (such as not buying stolen goods or cheating on taxes). In turn, high levels of trustworthiness and belief in reciprocity “foster the conditions for collaboration, coordination and cooperation to create collective goods (Norris, 2001).

The WVS measures trustworthiness with five questions about justification of certain actions that may benefit the individual but in the end, erode trust, norms of reciprocity and civic cooperation. These actions include claiming government benefits to which you are not entitled, not paying public transport fare, cheating on your taxes, buying stolen goods, and accepting a bribe. On a scale from 1 to 10, with 1 being Never Justifiable and 10 being Always Justifiable, this study analyzes the percent of respondents who answered (1), Never

each province claimed active membership to these groups. Thus, these associations are omitted from this analysis.

Justifiable. As there is strong correlation between these indicators, the data can be reduced and analyzed against HIV prevalence as a Trustworthiness Index.

Table 6.4 Interitem Association of Trustworthiness (Reciprocity) Indicators and Index

	Claiming government benefits to which you are not entitled (% Never Just)	Avoiding a fare on public transport (% Never Just)	Cheating on taxes if you have a chance (% Never Just)	Buying something you knew was stolen (% Never Just)	Accepting a bribe in the course of duties (% Never Just)	Trustworthiness (Reciprocity) Index
Claiming government benefits to which you are not entitled (% Never Just)	1.000					
Avoiding a fare on public transport (% Never Just)	0.937	1.000				
Cheating on taxes if you have a chance (% Never Just)	0.911	0.911	1.000			
Buying something you knew was stolen (% Never Just)	0.954	0.902	0.852	1.000		
Accepting a bribe in the course of duties (% Never Just)	0.738	0.749	0.618	0.774	1.000	
Trustworthiness (Reciprocity) Index	0.977	0.970	0.934	0.960	0.813	1.000

Since the measures of trust (interpersonal and institutional), associational membership, and trustworthiness are all operationalized measures of the social capital concept (Hjollund and Svendsen, 2000), one might expect to see a strong correlation between these dimensions of social capital. However, this is not the case. General trust is not strongly associated with active membership in either local (-0.039) or national (-0.325) organisations. A high level of institutional trust does not mean that people generally trust one another more (0.252) nor have more trustworthiness (-0.536). While I believe that each index is a valid measure of an aspect of social capital (based on face validity), they can not be further combined into a single social capital index. Newton and Norris found similar weak associations between general trust, associational membership, political attitudes and political trust (Norris, 1999). Given that the indices measuring the different dimensions of social capital may not be combined into one, each index will be considered against HIV diffusion in isolation.

Table 6.5 Interitem Association of Social Capital Indices

	General Trust	Institutional Trust Index	Membership Index - Local	Membership Index - National	Religious Activity Index	Trustworthiness (Reciprocity) Index
General Trust	1.000					
Institutional Trust Index	0.252	1.000				
Membership Index - Local	-0.039	0.504	1.000			
Membership Index - National	-0.325	-0.574	-0.169	1.000		
Religious Activity Index	-0.156	-0.382	-0.560	0.760	1.000	
Trustworthiness (Reciprocity) Index	-0.570	-0.536	-0.300	0.011	-0.167	1.000

Social Capital in South Africa

Interpersonal or general trust in South Africa is quite low. Nationally, just fifteen percent of people believe that most people can be trusted, varying from a low of five percent in the

North West to twenty-eight percent in the Eastern Cape.¹⁹ Interestingly, the North West also had the lowest Human Development Index (HDI) score in 1996 (0.61) and the second highest self-reported unemployment level (23.50 percent with only the Eastern Cape's 25.80 percent being higher). The North West is also one of the five provinces with consistently above average HIV prevalence rates from 1995 onwards.

However, the Eastern Cape had the highest percent of trusting citizens (28 percent), and has had consistently below average HIV prevalence rates from 1995 onwards, but one of the fastest growing epidemics, with an average increase of 2.20 percent over 7 years after 1997, secondly only to Gauteng's increase of 2.29 percent. Without taking any other factors into consideration, this already suggests a complex relationship between levels of general trust and HIV diffusion.

While there may not be a high level of interpersonal trust in South Africa, there is a willingness to trust the institutions that govern them. On average, fifty-four percent trust ((measured as "a great deal" or "quite a lot" of confidence) South Africa's governing institutions, varying from a low of 35 percent in the Western Cape and a high of 68 percent in Limpopo.

Many South African societies are communal in nature, where interactions are generally face-to-face, intense and constant with a small group of people (Norris, 1999). This is seen in the fact that on average, a larger percent of people are members of community-based groups (17 percent nationally, with a high of 23 percent in Gauteng) as apposed to more modern, bridging organisations (11 percent nationally, with a high of 13 percent in Gauteng, the Free State and Northern Cape). However, religious organisations are the most popular by far, with a national average of 63 percent of respondents claiming membership, varying from 39 percent in KwaZulu-Natal to 79 percent in the Northern Cape.

As for levels of trustworthiness and expected norms of reciprocity, a majority of South Africans (66 percent nationally) agree that socially destructive actions like claiming grants illegally, not paying transport fares, cheating on taxes, buying stolen goods and accepting

¹⁹ Please see Appendix F for more detailed descriptive analysis of the individual WVS social capital measures at a provincial level.

bribes, are not acceptable. With 51 percent, the Eastern Cape has the lowest percent of people believing these actions never justifiable, compared to 80 percent in the Western Cape.

Table 6.6 South African Provincial and National 1996 Social Capital Indices Scores

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (Mean)
% Trust most people	10	21	14	5	19	17	28	12	12	15
Institutional Trust Index	55	68	52	64	58	51	60	35	42	54
Membership Index - Local	23	17	12	19	20	17	18	15	12	17
Membership Index - National	13	10	9	10	6	13	9	12	13	11
Religious Activity Index	55	62	62	65	39	77	63	66	79	63
Trustworthiness (Reciprocity) Index Score	64	62	68	69	74	54	51	80	76	66

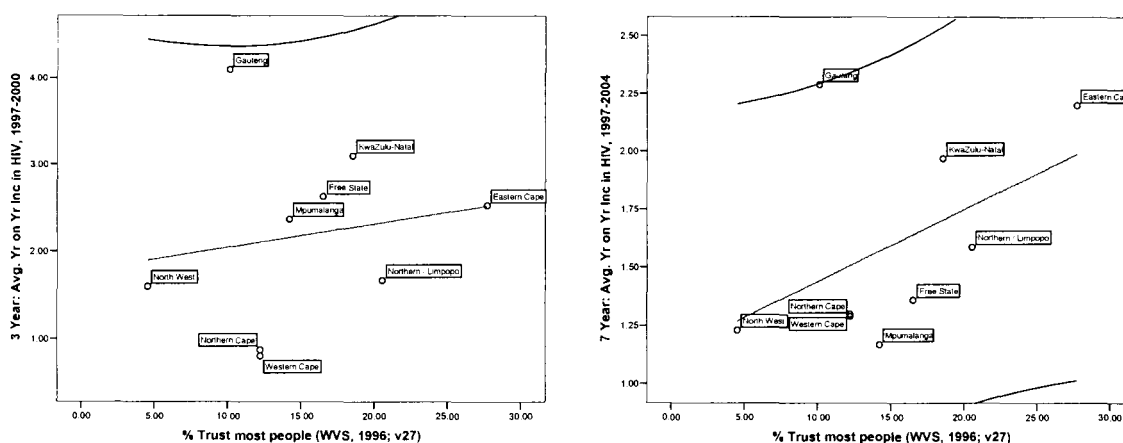
In conclusion, South Africans are not very trusting of people in general, but they appear willing to trust their new government and its institutions. And a majority of people believe in following the laws of society and duties of citizenship, thereby encouraging an environment of trustworthiness and reciprocity. Less than a third of the population claims active membership in formal secular organisations, but well over half of South Africans actively participate in religious organisations.

Social Capital and HIV prevalence

I conducted bivariate analysis to test the association between these measures of provincial social capital, and HIV diffusion. Aside from two intriguing exceptions, the associations between social capital and HIV diffusion are positive but relatively weak. Interpersonal trust is very weakly associated (0.168) with 3 year HIV diffusion, though slightly stronger (0.472) with 7 year HIV diffusion.

This suggests that trusting communities are not necessarily the ones in which sexual behaviours associated with HIV transmission are discouraged. In contrast, a *positive weak* relationship is observed, and increases in strength over time, suggesting higher levels of trust may actually increase HIV diffusion over time. In such communities, people may naively trust others to be HIV-negative, and as a result, place no priority on the use of condoms, or other sexual behaviours known to reduce the risk of HIV transmission. However, more research is needed as these findings are not strong enough to stake such a claim.

Figure 6.1 General Trust and HIV Diffusion Scatterplots



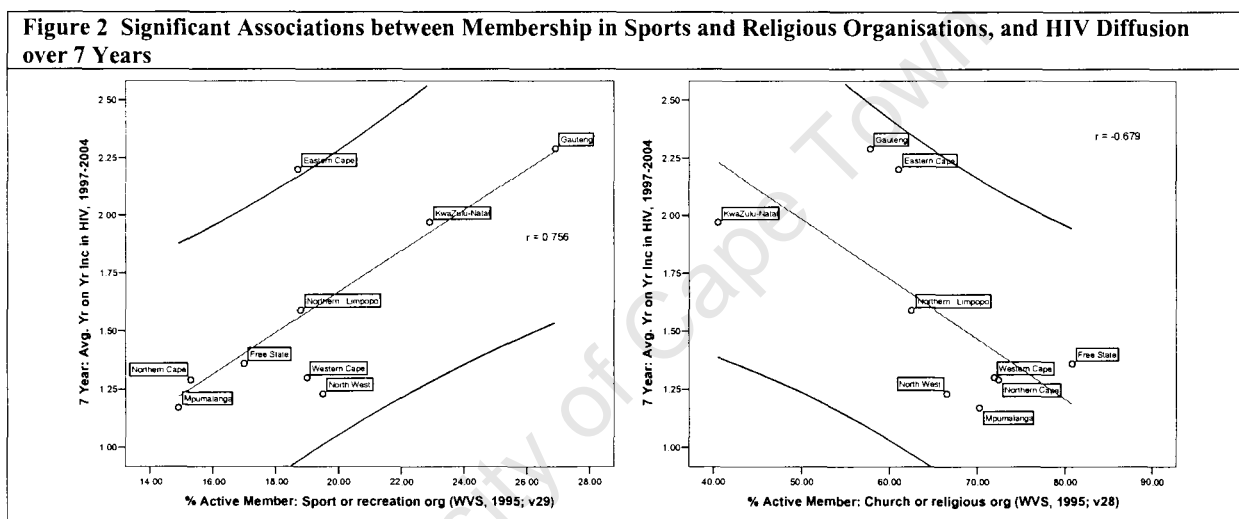
The Institutional Trust Index also demonstrates the same weak positive relationship with HIV diffusion (0.394 for 3 years and 0.344 for 7 years). Conversely, the Trustworthiness (Reciprocity) Index exhibits a weak but negative association with HIV diffusion (-0.463 and -0.397).

In contrast to these relatively weak associations, we find a remarkably strong positive association between active membership in local, secular organisations and HIV diffusion (0.718 for 3 years, and 0.749 for 7 years). Importantly, this relationship is not duplicated between active membership in national organisations (-0.242 for 3 years and -0.226 for 7 years). Communities in which membership in local organisations is relatively high are more likely to be those burdened with higher HIV diffusion rates. Could the attitudes, behaviours and activities of local, secular organisations increase the likelihood of HIV transmission throughout a community dominated by them? This evidence challenges the notion that social capital, as measured by active associational membership, is automatically good for society. Apparently, the benefit depends on the *type* of organization and hence, the type of social capital.

Table 6.7 Social Capital Indices Correlation With HIV Diffusion, 3 years and 7 years

	3 Year: Avg. Yr on Yr Inc in HIV 1997-2000	7 Year: Avg. Yr on Yr Inc in HIV 1997-2004
General Trust	0.168	0.472
Institutional Trust Index	0.394	0.344
Membership Index – Local	0.718	0.749
Membership Index – National	-0.242	-0.226
Religious Activity Index	-0.553	-0.571
Trustworthiness (Reciprocity) Index	-0.463	-0.397

This brings us to the idea of religious social capital. While a *strong positive* relationship was observed between the local, secular membership index and HIV diffusion (0.718 for 3 years and 0.749 for 7 years), a *strong negative* relationship was observed between the religious activity index and HIV diffusion (-0.553 for 3 years and -0.571 for 7 years). The difference is duplicated and strengthened further when individual indicators of the two indices (membership in religious organisations and membership in sports/recreation organisations) are compared. Active religious membership is strongly and negatively associated HIV diffusion over 7 years (-0.679), while active sports/recreational membership is strongly and positively associated with HIV diffusion over 7 years (0.756). This almost perfect mirror image is observed in the Figure 2.



These findings suggest that religious organisations somehow *encourage* behaviours and attitudes associated with lowering HIV transmission risk, while the behaviours and attitudes prevalent in many local, secular organisations increase the risk.

This relationship is complemented by some of the findings of the two Campbell led (Campbell et al, 2002 and Gregson et al, 2004) studies on social capital and HIV prevalence in South Africa and Zimbabwe. Looking at the influence of social capital at an individual level in a specific community, the Campbell studies found that membership in stokvels (secular, local social voluntary savings clubs) increased likelihood of HIV-positive status among young male members, and the presence of casual sexual partners among young female members. And although *no* significant relationship between church membership and HIV prevalence were observed (as apposed to the significant relationships observed in my research), male church members in Carletonville were less likely to have a casual partner in

the last year, as were young female youth group members. Additionally, HIV infection was less likely amongst young female members of youth groups (which are often linked with a church) (Campbell et al, 2002). A direct comparison of these studies would be ecologically fallible, as the Campbell studies analyze the behaviours of individuals and my study focuses on the actions of communities but it is interesting to note how some of findings of Campbell's micro-level studies compliment the findings of this macro-level study.

I believe there is enough evidence to suggest that religious social capital influences behaviours associated with decreased HIV transmission in a way that secular social capital does not. This assertion is made based on firstly, the strength of the opposite relationships between religious membership and local, secular membership, and HIV diffusion, and secondly, the strength of the negative relationships found between the other religiosity measures (belief and saliency) and HIV diffusion. It appears the mechanisms of social capital, coupled with the social monitoring and underlying values inherent in religious activity, seem to create a "health-enabling community" that "enables and supports health-enhancing behaviour" (Campbell et al, 2002), and ultimately lowers HIV diffusion through that community.

Chapter 7: Conclusion - A Call for Religiously Based Social Capital

Throughout the 1990s, HIV prevalence grew at an alarming rate across all of South Africa's nine provinces, making the fight against a generalised AIDS epidemic a policy priority for government and civil society alike. Also throughout the 1990s, many South Africans experienced high levels of impoverishment, disenfranchisement, rapid urbanization, labour migration, widespread population movements and displacements, and social disruption as a result of apartheid and the struggle against it (Zwi and Cabral, 1991). All of these characteristics have been associated with the creation of social conditions that might increase the chances of rapid HIV transmission (Dorrington and Johnson, 2002).

The AIDS epidemic in South Africa is driven by a "mixture and complex interaction of material, social, cultural and behavioural factors" (Gilbert and Walker, 2003). Sexual behaviour, alone, can not be blamed; throughout sub-Saharan African cities, high rates of risk enhancing sexual behaviour do not correlate with equally high rates of HIV prevalence (UNAIDS, 1999; Nattrass, 2002). "HIV/AIDS requires that we look at the far broader set of structural and relational conditions in which interpersonal relations, including sex, are embedded" (Crothers, 2001). However, little research has yet been conducted to systematically assess the impact of these factors on changes in HIV prevalence. This study has attempted to identify, measure and test some of the social, cultural and institutional conditions that are often assumed to influence HIV diffusion in South Africa.

South Africa, unlike many other African countries, benefits from a wealth of public opinion surveys, government studies, and other research that have documented its demographics, attitudes and behaviours. The 1996 World Values Survey, the 1996 South African Census, and annual South African antenatal clinic surveys are just a few that offer insight into the general health and economic, social, and cultural life of South Africans. Utilizing this data, I have undertaken a systematic quantitative test of the structural, cultural and institutional explanations of HIV diffusion. I have used bivariate analysis of indices of poverty, religiosity and social capital to test the assumptions that currently shape HIV prevention initiatives in South Africa.

Summary of Findings

To recall, I expected to observe strong positive relationships between levels of socio-economic conditions and HIV diffusion. In fact, I found weak relationships between most measures of socio-economic condition and HIV diffusion (measured as average HIV prevalence growth over 3 and 7 year periods after 1996). This suggests that simply alleviating poverty may not bring the behavioural and attitudinal change required to decrease the rate of HIV transmission. The Mbeki administration and the Department of Health may find more success in their HIV prevention policies if they acknowledge and account for the influence of culture.

From the cultural values indicators, I expected to observe strong negative relationships between levels of religiosity and HIV diffusion, and for the most part, this was the case. Specifically, the evidence suggests that religious saliency (the significance of religion in people's culture and daily life) and religious activity (membership and regular attendance to religious organisations) exhibit a stronger influence on behaviours associated with decreased HIV diffusion than specific religious beliefs (such as a belief in God, sin, heaven, etc). However, the mere prevalence of specific religious beliefs in a community is not as strongly associated with decreased HIV diffusion as the prevalence of religious saliency and activity.

Strong, negative relationships were expected between levels of social capital and HIV diffusion. Instead, I found an intriguing mixture of associational relationships. General trust (or interpersonal trust) and institutional trust (the level of confidence in national governing bodies) each have a positive, but weak association with HIV diffusion. Trustworthiness or reciprocity (the expectation of and adherence to lawful civic behaviours) and membership in large, national organisations, like labour unions and political parties, also exhibit a weak, but negative, association with HIV diffusion. The most significant relationships were observed with membership in different types of local, community based organisations. While a *strong positive* relationship was observed between membership levels in local, secular social organisations (like sports clubs and art/music groups) and HIV diffusion, an equally *strong negative* relationship was observed between membership levels in religious organisations and HIV diffusion. The observation of these strongly contrasting relationships, in conjunction with the strong negative relationship observed between religious saliency and HIV diffusion, points to the potentially positive influence of religiously-based social capital on HIV diffusion.

Implications

How should we understand these findings? They may result because religious socialization and activity can offer meaning and direction to life, unite social groups and encourage productive civic action. Religion “unites those who adhere to it; provides a shared view of life and death, of the situation of humanity in existence; it provides a prescription for the relationships of adherents to each other; it seeks to harmonise co-existence of its adherents and strengthens the group they form” (Allott, 1999). Such interaction and trust encourages social capital because social capital tends not to develop “among people who do not even understand each other...and stems in part from the availability of a common belief system that allows participants to communicate their ideas and make sense of common experiences” (Adler and Kwon, 2000), the idea of religious social capital emerges.

Religious socialization “channels individuals into personal communities” (Cornwall, 1987), thereby creating religious social capital that encourages communities to work together, to shape and be responsible to common goals, and to uphold the norms of reciprocity. In terms of HIV/AIDS prevention, religious social capital seems to have the capacity to unite and embolden a community to uphold and monitor the social and sexual behaviours associated with reduced HIV transmission.

As for PEPFAR, the findings suggest that they are on the right track by funding religious organisations, but mistaken in propelling a specific Christian belief agenda. The associations observed in this study suggest that the PEPFAR policy priority of abstinence and faithfulness (based on a *belief* that premarital sex and sex outside of marriage is a *sin*) in HIV prevention may be less likely to motivate behaviour change than a more general promotion of religious organisations and their activities. In other words, HIV/AIDS interventions should support religious organisations and their activities, but not dictate their message and approach to HIV prevention, as often, religious-based messages like abstinence and faithfulness give little credence to the different needs, situations and cultures present in every community battling HIV/AIDS.

In fact, several African religious institutions have already begun to realize the pivotal role they have to play in the battle against HIV/AIDS, where religious leaders have changed their approach and attitudes towards HIV/AIDS from one of silent condemnation to open compassion (Crawley, 2003). For example, in recent years, the Organization of African

Instituted Churches (a independent denomination group), the Supreme Council of Kenya Muslims, the World Council of Churches (a Protestant Umbrella group), and the South African Dutch Reform Church, have all launched HIV/AIDS awareness programs aimed at stopping stigmatization, and treatment and care services (Crawley, 2003).

But, cultures do not change over night and some of the obstacles to building social capital, religious or secular, must be acknowledged. For example, the Slum Dwellers International (SDI) and South African Homeless Peoples Federation (SAHFP) found it hard to “build social capital...[as] the urban poor are often unable, for a variety of reasons, to make these binding commitments...social capital, like global capital under conditions of late capitalism, can be fluid and fickle; here today and gone tomorrow” (Robins, 2003).

And lastly, evidence suggests that the promotion of religious social capital needs to be coupled with strong political will and support. Edward Green, while touting the success of HIV prevention initiatives in Senegal and Uganda, claimed the campaigns succeeded because they had their governments’ early, strong and bold involvement and support (Green, 2001). He points to Ugandan President Museveni, by far the most vocal and active African head of state in addressing the AIDS epidemic. President Museveni broke with the traditional taboo of discussing sex in public, emphasised fidelity and condemned extramarital sex, feeling that condoms could never provide the type of protection needed to stem the soaring infection rates (Green, 2001). This type of strong leadership is still needed from South Africa’s government officials.

In conclusion, this study offers some preliminary quantitative evidence on how certain structural, cultural and institutional factors are influencing HIV diffusion in South Africa. It is hoped that this evidence will inspire debate and more research, because, at the end of the day, what is most important is that HIV prevention initiatives be based on solid science, and driven by the specific characteristics and needs of beneficiary populations (Schechtman, 2006), rather than political agendas, religious ideologies or academic conjecture.

Bibliography

- Abdool Karim, Q., Abdool Karim, S., Singh, B., Short, R., and Ngxongo, S. (1992) Seroprevalence of HIV Infection in Rural South Africa. *AIDS*, 6:1535-39.
- Afolayan, F. (2004) Culture and Customs of South Africa. Westport, CT and London: Greenwood Press.
- Adler, P. and Kwon, S. (2000) "Social capital: the good, the bad, and the ugly" In Lessor, E. (ed), Knowledge and Social Capital: Foundations and Applications. Boston: Butterworth-Heineman,
- Alesina, A. and La Ferrara, E. (2000) The Determinants of Trust. The National Bureau of Economic Research Working Paper No. 7621. Cambridge, MA: NBER.
- Allen, C. (2003) Vulnerability and Strength in Women's Lived Experiences of HIV. Master of Science in Nursing thesis, August 2003, University of Cape Town.
- Allott, R. (1999) Religion and Science – Sex and Society: Forms and processes of cohesion. In T. Kristiaan and R. Cliquet (Eds) In-Group/Out-Group Behaviour in Modern Societies. Brussels: NIDI/CBGS Publications.
- Aggleton, P., Davis, P., and Hart, G. (1990) Eds. *AIDS: Individual, Cultural and Policy Dimensions*. London: The Falmer Press.
- Archer, S.E., Kelly, C.D., and Bisch, S.A. (1984) Implementing Change in Communities: A Collaborative Process. St. Louis: C.V. Mosby Company.
- AWEPA. *AIDS and the Next Generation: From national policy to local implementation*. Conference paper presented Nov. 27-29, 2000 in Northern Province, SA.
- Babbie, E. and Mouton, J. (2001) *The Practice of Social Research (SA Edition)*. Oxford: Oxford University Press.
- Bachmann, M. and Booysen, F. (2004) Relationships between HIV/AIDS, income and expenditure over time in deprived South African households. *AIDS Care*, 16(7):817-826.
- Banton, M. (1966) Anthropological Approaches to the Study of Religion. London: Tavistock.
- Bandura, A. (1996) Self-Efficacy in Changing Societies. Cambridge: Cambridge University Press.
- Barnett, T. and Whiteside, A. (1999) HIV/AIDS and development: case studies and a conceptual framework. *The European Journal of Development Research*, 11(2):200-234.

- Barnett, T., Whiteside, A., & Decosas, J. (2000) The Jaipur paradigm: A conceptual framework for understanding social susceptibility and vulnerability to HIV. *The South African Medical Journal*, in press.
- Barnett, T. and Whiteside, A. (2002) AIDS In the Twenty-First Century: Disease and Globalization. New York, Palgrave MacMillan.
- Baum, F. (1999) Editorial. Social capital: Is it good for your health? Issues for a public health agenda. *Journal of Epidemiology and Community Health*, 53(4): 195-196.
- Baum, F. and Ziersch, A. (2003) Glossary: Social Capital. *Journal of Epidemiological and Community Health*, 57:320-323.
- Bayat, A. (2005) Discussion Paper: Defining Social Capital, A brief overview of the key aspects and debates. 2005 Social Capital Conference and Workshops. Available: http://www.capegateway.gov.za/Text/2005/4/abdullah_bayat_paper_on_social_capital.pdf
- Beamish, R. (2006) Religious groups get chunk of AIDS money. Associated Press. *Washington Times*, 30 January 2006.
- Benn, C. (2002) The Influence of Cultural and Religious Frameworks on the Future Course of The HIV/AIDS Pandemic. *Journal of Theology for Southern Africa* 113 (July 2001), 3-18.
- Bird, K. and Shepherd, A. (2003) Livelihoods and chronic poverty in semi-arid Zimbabwe. *World Development*, 31(3):591-610.
- Boerma, J.T., Ghys, P.D., and Walker, N. (2003) Estimates of HIV-1 prevalence from national population-based surveys as a new gold standard. *The Lancet*, 362:1929-1931.
- Bohrbaugh, J. and Jessor, R. (1974) Religiosity in youth: A personal control against deviant behaviour. Publication No. 157. Denver, CO: Institute of Behavioural Science, University of Colorado.
- Booyesen, F.L.R. and Arntz, T. (2003) The methodology of HIV/AIDS impact studies. A review of current practices. *Social Science and Medicine*, 56:2003-2405.
- Bourdieu, P. (1986) The Forms of Capital, in Richardson, J., ed. Handbook of Theory and Research for the Sociology of Education. Westport, CT: Greenwood Press.
- Bourdillon, M. (1990) Religion and Society: A Text for Africa. Gweru, Zimbabwe: Mambo Press.
- Brehm, J. and Rahn, W. (1997) Individual-Level Evidence for the Causes and Consequences of Social Capital. *American Journal of Political Science*, 41(3):999-1023.

- Brummer, D. (2002) Labour Migration and HIV/AIDS in Southern Africa, International Organisation for Migration Regional Office for Southern Africa. Available at http://www.iom.int/en/PDF_Files/HIVAIDS/Labour_migration_hiv_aids.pdf
- Caldwell, J.C. (1995) Understanding the AIDS epidemic and reacting sensibly to it. *Social Science and Medicine*, 41(3):299-302.
- Calhoun, C. (1995) Critical Social Theory: Culture, History, and the Challenge of Difference. Oxford: Blackwell.
- Campbell, C. (2003). Letting them Die: How HIV/AIDS prevention programmes often Fail. Oxford: James Currey.
- Campbell, C. and William, B. (1999) Beyond the Biomedical and Behavioural: Towards an Integrated Approach to HIV Prevention in South African Mining Industry. *Social Science and Medicine*. 48: 1625-1639.
- Campbell, C., Williams, B., and Gilgen, D. (2002) Is Social Capital A Useful Conceptual Tool For Exploring Community Level Influences On HIV Infection? An Exploratory Case Study From South Africa. *AIDS Care*, 14(1):41-54.
- Campbell, C. and Mzaidume, Z. (2002) How Can HIV Be Prevented In South Africa? A Social Perspective. *British Medical Journal*, 324:229-32.
- Campbell, C. and Mzaidume, Z. (2001) Grassroots Participation, Peer Education, and HIV Prevention by Sex Workers in South Africa. *American Journal of Public Health*, 91(12):1978-86.
- Campbell, T. (1981). Seven Theories of Human Society. Oxford: Clarendon Press.
- Cassidy, M. and Nanayan, D. (2001). A Dimensional Approach to Measuring Social Capital: Development and Validation of a Social Capital Inventory. *Current Sociology*, 49(2) 59-102.
- “Castro Hlongwane, Caravans, Cats, Geese, Foot and Mouth and Statistics: HIV/AIDS and the Struggle for the Humanisation of the African” March 2002, African National Congress National Executive, rumoured author Peter Mokaba.
- Caughy, M., O’Campo, P., and Muntaner, C. (2003) When being alone might be better: neighbourhood poverty, social capital and child mental health. *Social Science & Medicine*. 57(2):227-237.
- Central Statistical Service. (1996) Provincial Statistics 1995: KwaZulu-Natal. CSS Report No. 00-90-05 (1995). Pretoria: Central Statistical Service.
- Chidester, D. (1992) Religions of South Africa. London and New York: Routledge.
- Chidester, D., Dexter, P., and James, W. (eds) (2001) What Holds Us Together: Social cohesion in South Africa. Pretoria: HSRC.

- Cohen, Don and Laurence Prusak. (2001) In Good Company: How Social Capital Makes Organizations Work. Boston: Harvard Business School Press.
- Cohen, J. (2005) The Less They Know the Better: Abstinence-only HIV/AIDS Programs in Uganda. New York: Human Rights Watch.
- Coleman, J.S. (1988) Social capital in the Creation of Human Capital. *American Journal of Sociology*, 94 Supplement S95-S120. University of Chicago.
- Coleman, James S. (1990) Foundations of Social Theory. Cambridge: Belknap Press of Harvard University Press.
- Colgan, A.L. (2005) African Policy Outlook 2005. Washington, DC: Foreign Policy In Focus. Available online at www.fpiif.org/papers/2005africa.html
- Cornwall, M. (1987) The Social bases of Religion: A Study of Factors Influencing Religious Belief and Commitment. *Review of Religious Research*, 29(1): 44-56.
- Country Studies. (2002) Country Studies/Area Handbook Program. Online books published by Federal Research Division of the Library of Congress. Sponsored by the U.S. Department of Army. Online at: www.country-studies.com/south-africa/
- Crawley, M. (2003) African clerics rethink AIDS stance. *The Christian Science Monitor*. 24 September 2003.
- Crothers, C. (2001) Social Factors and HIV/AIDS in South Africa: Editorial Overview. *Society in Transition*, 32(1).
- Cullinan, Kerry. (2003) Government unpredictable on AIDS. *The Sunday Times*, 23 February 2003. Available: <http://www.suntimes.co.za/2003/02/23/insight/in02.asp>.
- De Bruyn, M., Jackson, H., Wijermars, M., Knight, V.C. and Berkvens, R. (1995) Facing the Challenges of HIV/AIDS/STDs: What Does a Gender-based Response Involve? Amsterdam: the Royal Tropical Institutes.
- Department of Health. (1997) Health Trends in South Africa: 1995/1996. Health Systems Research and Epidemiology. ISBN 0-621-15869-0. Pretoria: Department of Health.
- Department of Health. (2000) HIV/AIDS/STD Strategic Plan for South Africa 2000-2005. Pretoria: Department of Health.
- Department of Health, (2003) Pretoria: Department of Health. Published online reports available:
- National AIDS Unit, Department of Health http://www.doh.gov.za/aids/docs/aids_unit.html
 - HIV/AIDS Funding for the Health Sector in Budget 2002: Comparison of funds allocated and funds requested in the Department of Health's "Enhanced Responses" Budget Submission <http://www.doh.gov.za/aids/docs/funding.html>
 - An Enhanced Response to HIV/AIDS and Tuberculosis in the Public Health Sector – Key Components and Funding Requirements, 2002/03-2004/05
 - Cluster HIV/AIDS and TB <http://www.doh.gov.za/departement/index.html>

- Tracking Progress on the HIV/AIDS and STI Strategic Plan for South Africa: June 2000-March 2003 <http://www.doh.gov.za/aids/docs/progress.html>.
- Dorrington, R. and Johnson, L. (2002) Ch. 2: Epidemiological and Demographic. In J. Gow and C. Desmond (Eds.) Impacts and Interventions: The HIV/AIDS Epidemic and the Children of South Africa. Pietermaritzburg: University of Natal Press: 13-57.
- Durkheim, E. (1915) The Elementary Forms of Religious Life. New York: Macmillan.
- Edmondson, R. (2003) Social capital: a strategy for enhancing health? *Social Science & Medicine* 57:1723-1733.
- Edwards, R. (2002). Social Capital: A Sloan Work and Family Research Network Entry, Families & Social Capital ESRC Research Group, South Bank University. Available online www.bc.edu/bc_org/avp/wfnetwork/rft/wfpedia/wfpSCent.html, 31 July, 2003]
- Egbert, N., Mickley, J., and Coeling, H. (2004) A Review and Application of Social Scientific Measures of Religiosity and Spirituality: Assessing a Missing Component in Health Communication Research. *Health Communication*, 16(1):7-27.
- Elliot, I. (2001) Social Capital and Health: literature review. Institute of Public Health in Ireland. Unpublished report.
- EngenderHealth.org (2002) "The Men as Partners Program in South Africa: Reaching Men to End Gender Based Violence and Promote HIV/STI Prevention" MAP Briefing Paper Presented at the International AIDS Conference, Barcelona. <http://www.engenderhealth.org/ia/wwm/pdf/map-sa.pdf>
- EngenderHealth.org (2004) website dedicated to Improving Women's Health Worldwide. <http://www.engenderhealth.org/wh/sg/egwhat.html>
- Etounga-Manguelle, Daniel. (2000) Does Africa Need a Cultural Adjustment Program? In L. Harrison and S. Huntington (Eds.) Culture Matters: How Values Shape Human Progress. New York: Basic Books.
- Fine, Ben. (2001) Social Capital versus Social Theory: Political Economy and Social Sciences at the Turn of the Millennium. New York: Routledge.
- Fukuyama, F. (1995) Trust: the social virtues and the creation of prosperity. New York: The Free Press.
- Garner, R. (2000) Safe sects? Dynamic religion and AIDS in South Africa. *Journal of Modern African Studies*, 38(41-69).
- Gilbert, L. and Walker, L. (2003) Treading the path of least resistance: HIV/AIDS and social inequalities – a South African case study. *Social Science & Medicine*, 54(7):1093-1110.
- Gillies, P. and Tolley, K. (1996) Is AIDS a Disease of Poverty? *AIDS Care*, 8(3).

- Glock, C. and Stark, R. (1965) Religion and society in tension. Chicago: Rand-McNally
- Glynn, J.R., Buve, A., Carael, M., et al. (2001) Factors influencing the difference in HIV prevalence between antenatal clinic and general population in sub-Saharan Africa. *AIDS*, 15:1717-25.
- Green, E.C. (2001) "The Impact of Religious Organizations in Promoting HIV/AIDS Prevention". Revised version of paper presented at "Challenges for the Church: AIDS, Malaria & TB" Conference, Christian Connections for International Health, Arlington, VA, May 25-26, 2001.
- Green, E.C. (2003). "Faith-Based Organizations: Contributions to HIV Prevention". Report Produced by The Synergy Project, implemented by TvT Global health and development Strategies, a division of Social & Scientific Systems, Inc, under USAID Contract Number: HRN-C-00-99-00005-00.
- Gumede, W.M. (2005) Thabo Mbeki and the Battle for the Soul of the ANC. Cape Town: Zebra Press.
- Gyekye, A.B. and Akinboade, O.A. (2001) Analysis of Poverty in the Northern Province of South Africa: Implications for Empowerment Policy. Paper presented at the 75th Anniversary Conference of the Economic Society of South Africa at Glenburg Lodge, Johannesburg, 13 September 2001. Pretoria: University of South Africa.
- Halpern, D. (2005) Social Capital. Cambridge and Malden, MA: Polity Press.
- Hambridge, M. (1990) AIDS/HIV and Social Dislocation in Natal. *AIDS Analysis Africa*. 1(3): 6-8.
- Harper, R. (2001) Social Capital: A review of the literature. Social Analysis and Reporting Division, Office for National Statistics. United Kingdom: National Statistics.
- Harrison, L. and Huntington, S. (2000) Eds. Culture Matters: How Values Shape Human Progress. New York: Basic Books.
- Hawe, P. and Shiell, A. (2000) Social capital and health promotion: a review. *Social Science & Medicine*. 51:871-885.
- Herriot, A., Crossley, M., Juma, M., Waudu, J., and Mwiroti, M. (2002) The development and operation of headteacher support groups in Kenya: a mechanism to create pockets of excellence, improve the provision of quality education and target positive changes in the community. *International Journal of Educational Development*, 22(5): 509-526.
- Hirschowitz, R., Orkin, M., Alberts, P. (1998) Chapter 3: Key baseline statistics for poverty measurement. In Statistics SA (1998) The people of South Africa: Population Census 1996, Census in Brief. Pretoria: Stats. SA.
- Hirschowitz, R. (2000) Measuring Poverty in South Africa. Pretoria: Stats SA.

- Hjollund, L. and Svendsen, G.T. (2000) Social Capital: A Standard Method of Measurement. Part of forthcoming book by Paldam, M. and Svendsen, G.T. Trust, Social Capital and Economic Growth: An International Comparison. Cheltenham: Edward Elgar.
- Holtgrave, D. and Crosby, R. (2003) Social capital, poverty, and income inequality as predictors of gonorrhoea, syphilis, chlamydia and AIDS case rates in the United States. *Sexually Transmitted Infections*, 79:62-64.
- Houston, G. (2001) Public participation in democratic governance in South Africa. Pretoria: HSRC.
- HSRC. (2004) *Fact Sheet: Poverty in South Africa*. Fact Sheet No.1: 26 July 2004. Pretoria: Human Sciences Research Council. Available at: www.sarpn.org.za/documents/d0000990/index.php.
- Inglehart, R. et al. (2000) World Values Surveys and European Values Surveys, 1981-1984, 1990-1993, and 1995-1997. [Computer file]. ICPSR Version. Ann Arbor, MI: Institute for Social Research [producer]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].
- Israel, B., Checkoway, B., Schulz, A. and Zimmerman, M. (1994) Health education and community empowerment: conceptualising and measuring perceptions of individual, organisational and community control. *Health Education Quarterly*, 21:149-170.
- Jackson, A., Fawcett, G., Milan, A., Roberts, P., Schetagne, S., Scott, K., and Tsoukalas, S. (2000) Social Cohesion in Canada: Possible Indicators. Canadian Council on Social Development, Reference: SRA-542. Quebec: Strategic Research and Analysis.
- Jochelson, K., Mothibeli, M., and Leger, J. (1991) HIV and immigrant labour in South Africa. *International Journal of Health Services*, 21:157-13.
- John, T.J. (1995) "Sexuality, sin and disease: Theological and ethical issues posed by AIDS to the churches: Reflections by a physician". *Ecumenical Review*. July 1, 1995. pp.373-84.
- Johnson, J. and Joslyn, R. (1995) "The Building Blocks of Social Scientific Research: Measurements," In Political Science Research Methods. Washington, DC: Congressional Quarterly, Ch. 4.
- Kawachi, I. (1997) Long Live Community: Social Capital as Public Health. *The American Prospect*. 8(35).
- Kawachi, I. (2001) Social Capital for Health and Human Development. *Development* 44(1):31-36.
- Kawachi, I. and Berkman, L. (2000) Social Cohesion, Social Capital and Health. In Berkman, L., Kawachi, I., eds. Social epidemiology. New York and Oxford: Oxford University Press. pp. 171-90.

- Kawachi, I., Kennedy, B., and Lochner, K. (1997) Social Capital, Income Inequality, and Mortality. *American Journal of Public Health*. 87:1491-8.
- Kerr, A.W. and Kozub, S. (2003) Doing Statistics with SPSS. London ; Thousand Oaks, California: SAGE.
- Klandermans, B., Roefs, M., and Olivier, J. (2001) The State of the People: Citizens, civil society and governance in South Africa, 1994-2000. Pretoria: HSRC.
- Knack, S. and Keefer, P. (1997) Does Social Capital Have an Economic Pay-off? A Cross Country Investigation. *Quarterly Journal of Economics*. 112.4:1251-1288.
- Koenig, H.G. (1997) Is Religion Good for Your Health? Binghamton, NY: Haworth Pastoral.
- Krishna, A. and Shrader, E. (1999) Social Capital Assessment Tool. *Conference paper for Conference on Social Capital and Poverty Reduction*. The World Bank, June 22-24, 1999.
- Krueger, L., Wood, R., Diehr, P., and Maxwell, C. (1990) Poverty and HIV seropositivity: the poor are more likely to be infected. *AIDS*, 4(8): 811-4.
- Kwesigabo, G., Killewo, J.Z.J., and Urassa, W. (2000) Monitoring of HIV-1 infection prevalence and trends in the general population using pregnant women as sentinel population: 9 years experience from the Kagera region of Tanzania. *Journal of Acquired Immune Deficiency Syndrome*, 23: 410-17.
- Larson, D.B., Sawyers, J.P., and McCullough, M.E. (Eds) (1998) *Scientific Research on Spirituality and Health: A Consensus Report*. Rockville, MD: National Institute for Healthcare Research.
- Leclerc-Madlala, S. (2001) Demonising Women in the Era of AIDS: On the Relationship Between Cultural Constructions of both HIV/AIDS and Femininity. *Society in Transition*, 32(1).
- Leuba, J.H. (1929) The Psychology of Religious Mysticism. New York: Harcourt Brace.
- Levin, J.S. (1994) Religion and Health: Is There an Association, is it Valid, and is it Causal? *Social Science Medicine*, 38(11):1475-1482.
- Lifeworks (2005) Sean Jelley presentation to CARE International
- Lipton, M. and Ravallion, M. (1995) Poverty and policy. In J. Behrman & T.N. Srinivasan (Eds), *Handbook of development economics*, 3:2552-2653. Amsterdam: Elsevier Science.
- LoveLife. (2000) Hot Prospects, Cold Facts: Portrait of Young South Africa. LoveLife in conjunction with *The Sunday Times* publication.

- Makubalo, L., Levin, J., Muluma, R. (1999) Survey of HIV prevalence among women attending antenatal clinics in South Africa – 1999. Pretoria: Department of Health.
- Macinko, J. and Starfield, B., (2001) The Utility of Social Capital in Research on Health Determinants. *The Milbank Quarterly*, 79(3):387-427.
- Maluccio, J., Haddad, L., and May, J. (1999) Social capital and Income Generation in South Africa, 1993-98. Paper prepared for IDS-IFPRI Workshop April 7-8, 1999. *Economic Mobility and Poverty Dynamics in Developing Countries*.
- Maluccio, J., Haddad, L., and May, J. (2000) Social capital and household welfare in South Africa. *The Journal of Development Studies*, 36(6):54-81.
- Maluccio, J. and Haddad, L. (2003) Trust, Membership in Groups, and Household Welfare: Evidence from KwaZulu-Natal, South Africa. *Economic Development and Cultural Change*, 51:573-601.
- Mattes, R. and Bratton, M. (2003) Learning About Democracy in Africa: Awareness, Performance, and Experience. Afrobarometer Paper No. 31. Cape Town: IDASA.
- Mbiti, J. (1974) Introduction to African Religion. London: Heinemann.
- McMillan, D.W. and Chavis, D.M. (1986) Sense of Community: a Definition and Theory. *Journal of Community Psychology*, 14:6-23.
- Morris, S.S., Carletto, C., Hoddinott, J., and Christiaensen, L.J. (2000) Validity of rapid estimates of household wealth and income for health surveys in rural Africa. *Journal of Epidemiology and Community Health*, 54:381-387.
- Morrow, V. (1999) Conceptualising Social Capital in Relation to the Well-Being of Children and Young People: A Critical Review. *Sociological Review*, 47(4):744-66.
- Moser, C. (1997) Violence and Poverty in South Africa: Their Impact on Household Relations and Social Capital. Information Discussion Paper Series, Southern African Country Department. Washington, DC: World Bank.
- May, J. (1998) Poverty and Inequality in South Africa. Durban: Praxis Publishing.
- Nan, L., Cook, K. and Burt, R.S. (2001) Eds. Social Capital: Theory and Research. New York: Aldine de Gruyter.
- Narayan, D. (1997) *Voices of the Poor: Poverty and Social Capital in Tanzania*. Washington, D.C.: World Bank Development Studies and Monographs Series 20.
- Narayan, D. and Pritchett, L. (1997) Cents and sociability: household income and social capital in rural Tanzania. World Bank Policy Research Working Paper No. 1796. Washington, D.C.: World Bank.

- Narayan, D. and Cassidy, M. (2001) A Dimensional Approach to Measuring Social Capital: Development and Validation of a Social Capital Inventory. *Current Sociology*, 49(2):59-102.
- Nattrass, N. (2002) AIDS and Human Security in Southern Africa. *CSSR Working Paper No. 18*, AIDS and Society Research Unit, Centre for Social Science Research, University of Cape Town.
- Newton, K. (1997) Social capital and democracy. *American Behavioural Scientist*, 40:575-65.
- Ng'weshemi, J. (1997) HIV Prevention and AIDS Care in Africa: A District Level Approach.
- Nicholas, L. and Durrheim, K. (1995) Religiosity, AIDS, and Sexuality Knowledge, Attitudes, Beliefs and Practices of Black South African First-Year University Students. *Psychological Reports*, 77:1328-1330.
- Noble, M., Ratcliffe, A., and Wright, G. (2004) mConceptualizing, Defining and Measuring Poverty in South Africa: An Argument for a Consensual Approach. Centre for the Analysis of South African Social Policy. University of Oxford. England: CASASP.
- Noble, R., Berry, S., and Fredriksson, J. (2005) South Africa HIV/AIDS Statistics. Available: www.avert.org/safricastrats.htm
- Norris, P. (1999) Critical Citizens: Global Support for Democratic Governance. Oxford: Oxford University Press.
- Norris, P. (2001) Democratic Phoenix: Reinventing Political Activism. Cambridge: Cambridge University Press.
- Norris, P. (2002) Sceptical Patients: Performance, Social Capital and Culture. Paper for HSPH conference, "Public's Health A Matter of Trust: Causes, Consequences, and Cures Symposium", November 13-15, 2002.
- Office of the United States Global AIDS Coordinator. (2004) The President's Emergency Plan for AIDS Relief: U.S. Five-Year Global HIV/AIDS Strategy. Washington, DC.
- Orubuloye, I.O., et al. (1994) Eds. Sexual Networking and AIDS in Sub-Saharan Africa : Behavioral Research and the Social Context. Australia: Health Transition Centre, The Australian National University.
- Paldam, M. (2000) Social Capital: One or Many? Definition and Measurement. *Journal of Economic Surveys*, 14(5): 629-653.
- Paxton, P. (1999) Is social capital declining in the United States? A multiple indicator assessment. *American Journal of Sociology*, 105:88-127.
- Pearce, N. and Smith, G. (2003) Is Social Capital the Key to Inequalities in Health? *American Journal of Public Health*, 93(1): 122-30.

- PHAC. (2002) Public Health Agency of Canada. Available at: www.phac-aspc.gc.ca/publicat/haest-tesvs/i_e.html.
- Productivity Commission. (2003) *Social Capital: Reviewing the Concept and its Policy Implications*. Research Paper. Canberra: AusInfo.
- Pronyk, P. (2002) *Social Capital and the HIV/AIDS epidemic in rural South Africa: The New Magic Bullet?* PhD Upgrading Document, Dept. of Infectious and Tropical Diseases, Available at: www.wits.ac.za/radar/PDF%20files/socialcapital_HIV.PDF
- Prozesky, M. and de Gruchy, J. (1995) *Living Faiths in South Africa*. Cape Town: David Philip.
- Putnam, R. (1993) *Making Democracy Work: Civic Traditions in Modern Italy*. Princeton, NJ: Princeton University Press.
- Putnam, R. (2000) *Bowling Alone: The Collapse and revival of American community*. New York: Simon and Schuster.
- Putnam, R. (2001) *Social Capital: Measurement and Consequences*. *Printemps*, Spring.
- Rahn, W. and Transue, J. (1998) Social trust and value change: the decline of social capital in American youth, 1976-1995. *Political Psychology*, 19:545-65.
- Rehle, T., Lazzari, S., Dallabetta, G., and Asamoah-Odei, E. (2004) Second-generation HIV surveillance: better data for decision making. *Bulletin of the World Health Organization*. 82(2):121-127.
- Reidpath, D. (2003) "Love thy neighbour" – it's good for your health: a study of racial homogeneity, mortality and social cohesion in the United States. *Social Science and Medicine*, 57: 253-261.
- Reynolds, V. (1992) *Socio-Ecology of Religion*. In M. Maxwell (Ed.), *The Sociobiological Imagination*. New York: SUNY.
- Richens, J., Imrie, J., and Copas, A. (2000) "Condoms and seat belts: The parallels and the lessons. *Lancet*, 29:400.
- Robins, S. (2003) "Grounding 'globalisation from below: 'global citizens' in local spaces". In D. Chidester, P. Dexter and W. James (Eds) *What Holds Us Together: Social cohesion in South Africa*. Cape Town: HSRC Press.
- Rohrbaugh, J., and Jessor, R. (1975) Religiosity in youth: a personal and social control against deviant behaviour. *Journal of Personality*, 43:136-155.
- Rose, R. (1999) *What does Social Capital Add to Individual Welfare? An Empirical Analysis of Russia*. Centre for the Study of Public Policy, Univ. of Strathclyde, Glasgow. Working Papers of the Social Capital Initiative, World Bank.

- Rose, R. (2001). *The Impact of Social Capital on Health*. Glasgow: University of Strathclyde, Centre for the Study of Public Policy, No.358.
- Rule, S.P. (2002) *Spirituality in South Africa: Christian beliefs. Public Attitudes in Contemporary South Africa: Insights from an HSRC survey*. Pretoria: HSRC.
- Schechtman, L. (2006) Email correspondence 7-9 Feb 2006 with Lisa Schechtman, researcher at Global AIDS Alliance, lschechtman@globalaidsalliance.org. Washington, DC.
- Schoepf, B.G. (1995) Ch.2: Culture, Sex Research and AIDS Prevention in Africa. In H. Brummelhuis and G. Herdt (Eds) *Culture and Sexual Risk: Anthropological Perspectives on AIDS*. Newark, NJ: Gordon and Breach.
- Shetler, J.B. (1995). A Gift for Generations to Come: A Kiroba Popular History from Tanzania and Identity as Social Capital in the 1980s. *The International Journal of African Historical Studies*, 28(1): 69.
- Sitze, A. (2004) Denialism. *The South Atlantic Quarterly* 103:4, Fall 2004. Duke University Press.
- Skrabski, A., Kopp, M., and Kawachi, I. (2003). Social Capital in a Changing Society: Cross Sectional Associations Middle-Aged Female and Male Mortality Rates. *Journal of Epidemiology and Community Health*, 52(2):114-119.
- Skidmore, D. and Hayter, E. (2000). Risk and sex: ego-centricity and sexual behaviour in young adults. *Health, Risk & Society*, 2(1):23-32.
- Smith, W. A. (2004) *World AIDS Day 2004: Playing Politics with Compassion*. Washington, DC: Center for American Progress.
- Starbuck, E.D. (1899) *The Psychology of Religion*. London: Scott.
- Statistics South Africa. (1998) *The people of South Africa: population census 1996, Census in Brief/Statistics South Africa*. 5th Edition. Pretoria: Stats SA.
- Statistics South Africa (1999) *1996 Census Primary Tables*. Report 03-01-19. Pretoria: Stats SA.
- Statistics South Africa. (2001) *Human Development Index (P0015)*. Pretoria: Stats SA.
- Statistics South Africa. (2003) *Census 2001: Census in brief/Statistics South Africa*. 2nd Edition. Pretoria: Stats SA.
- Statistics South Africa. (2003) *Provincial Profile 1999: Eastern Cape*. Report No. 00-91-02. Pretoria: Stats SA.
- Statistics South Africa. (2005) *Mortality and causes of death in South Africa, 1997-2003: findings from death notification*. Pretoria: Stats SA. Available online www.statssa.gov.za/Publications/P03093/P03093.pdf

- Stone, W. (2001) *Measuring social capital: Towards a theoretically informed measurement framework for researching social capital in family and community life*. Melbourne: Australian Institute of Family Studies, Report No.24.
- Stone, W. and Hughes, J. (2002) *Measuring Social Capital: Towards a standardised approach*. Paper presented at the 2002 Australasian Evaluation Society International Conference October/November 2002 – Wollongong Australia. Melbourne: Australian Institute of Family Studies.
- Swann, C. and Morgan, A. (eds.) (2002) *Social Capital for Health: Insights from Qualitative Research*. London: Health Development Agency. Available online www.hda-online.org.uk/downloads/pdfs/social_capital_complete_jul02.pdf.
- Takyi, B.K. (2003) Religion and women's health in Ghana: insights into HIV/AIDS preventive and protective behaviour. *Social Science and Medicine* 56:1221-1234.
- Thoresen, C.E. and Harris, A.H.S. (2002) Spirituality and Health: What's the Evidence and What's Needed? *Annals of Behavioural Medicine*, 24(1).
- Treatment Action Campaign (TAC) (2005) Treat 200,000 by 2006! TAC Electronic newsletter – 10 February 2005 Available online www.tac.org.za
- Tshabalala-Msimang, M. (2004) "Rural Health Care to Be Improved: Manto" *Sunday Times*, Nov. 3, 2004. Available online <http://www.sundaytimes.co.za/zones/sundaytimesnew/newsst/newsst1099489031.aspx>
- Ulsner, E. (2002) *The Moral Foundations of Trust*. Cambridge: Cambridge University Press.
- UNAIDS. (1999) Trends in HIV incidence and prevalence: natural course of the epidemic or results of behavioural change? Geneva: UNAIDS.
- UNAIDS. (2000) Report on the Global HIV/AIDS Epidemic: June 2000. Geneva: UNAIDS.
- UNAIDS/WHO (2002) AIDS Epidemic Update: December 2002. Geneva: UNAIDS.
- UNAIDS. (2004) 2004 Report on the global AIDS epidemic. Geneva: UNAIDS.
- UNCHS (2000) Urban Society Social Capital. United Nations Human Settlements Programme (UN-Habitat). Available online www.unchs.org/Istanbul+5/48.pdf
- UNICEF (2005) How does HIV affect young people? United Nations Children's Fund Available online http://www.unicef.org/aids/index_youngpeople.html
- UNDP (2000) Gender Update Issue 3, July 2000. United Nations Development Programme - South Africa. Available online www.undp.org.za/misc/genderupdate3.html
- UNDP (2003) *South Africa Human Development Report 2003: The Challenge of Sustainable Development in South Africa: Unlocking People's Creativity*. United

Nations Development Programme – South Africa. Available online
www.undp.org.za/NHDR2003/NHDRSumFull.pdf.

USAID (2003) South Africa Country Profile: HIV/AIDS. U.S. Agency for International Development. Washington, DC. Available online:
http://www.usaid.gov/pop_health/aids/Countries/africa.southafrica.html.

USAID (2005) U.S. Agency for International Development. www.usaid.gov. WebPages referenced and available as of Feb 2, 2005:

- http://www.usaid.gov/our_work/global_health/aids/TechAreas/behaviorchange/behaviorfactsheet.html
- <http://www.usaid.gov/policy/budget/cbj2005/afr/za.html>
- Congressional Budget Justification FY2005 at
<http://www.usaid.gov/policy/budget/cbj2005/afr/pdf/674-008.pdf>
- The ABCs of HIV Prevention at
http://www.usaid.gov/our_work/global_health/aids/News/abcjan04.pdf

Van Schaik, T. (2002) Social Capital in the European Values Study Surveys. Country paper prepared for the OECD-ONS International Conference on Social Capital Measurement London, September 25-27, 2002. The Netherlands: Tilburg University

Wall, E., Ferrazzi, G., and Schryer, F. (1998) Getting the Goods on Social Capital. *Rural Sociology*. 63(2):300-322.

Wallace, R. (1993) Social disintegration and the spread of AIDS II: Meltdown of sociographic structure in urban minority neighbourhoods. *Social Science and Medicine* 37:887-896.

Whiteside, A. and Barnett, T. (2002) AIDS in the Twenty-First Century: Disease and Globalization. New York: Palgrave MacMillan.

Whiteside, A., Mattes, R., Willan, S., and Manning, R. (2002) Examining HIV/AIDS in Southern Africa Through the Eyes of Ordinary Southern Africans. Afrobarometer Paper No. 21. Cape Town: IDASA.

Whiteside, A. and Sunter, C. (2000) AIDS: The Challenge for South Africa. Cape Town: Human and Rousseau.

Whiteley, P.F. (2000) Economic Growth and Social Capital. *Political Studies*, 48:443-466.

Weisner, T.S. (2000) Culture, Childhood, and Progress in Sub-Saharan Africa. In L. Harrison and S. Huntington (Eds.) Culture Matters: How Values Shape Human Progress. New York: Basic Books: 141-157: 65-77.

Wilkinson, R.G. (1996) Unhealthy Societies: The Afflictions of Inequality. London and New York: Routledge.

Wilkinson, R.G., Kawachi, I., and Kennedy, B.P. (1998) Mortality, the social environment, crime and violence. *Sociology of Health and Illness*, 20(5):578-597.

- Wojcicki, J.M. (2005) Socioeconomic status as a risk factor for HIV infection in women in East, Central and Southern Africa: a systematic review. *Journal of Biosocial Science* 37(1):1-36.
- Woolley, F.R. and Marshall, J. (1994) Measuring inequality within the household. *Review of Income and Wealth*, 40:415-431.
- World Bank. (1999) www.worldbank.org/poverty/scapital
- World Bank. (2003) Social Capital Initiative Working Papers Series: How is Social Capital Measured? <http://www.worldbank.org/poverty/scapital/SChowmeas1.htm>
- World Bank (1997) Confronting AIDS: Public Priorities in a Global Epidemic. England: Oxford University Press.
- World Economic Forum. (2005) South African Business Praised for AIDS Response. 1 June 2005 – Cape Town, South Africa. Available: www.weforum.org.
- Ziehl, S.C. (2001) Documenting Changing Family Patterns in South Africa: Are Census Data of Any Value? *African Sociological Review* 5:2:36-62.
- Ziehl, S.C. (2003) *The family and social cohesion*. In D. Chidester, P. Dexter and W. James (Eds) What Holds Us Together: Social cohesion in South Africa. Pretoria: HSRC.
- Zimmermann, A. (2004) Towards a New Christian Sexual Ethics in the Light of HIV/AIDS. *International Review of Mission*, 93(569):225-269.
- Zwi, A. and Cabral, A.J. (1991) Identifying 'high risk situations' for preventing AIDS. *British Medical Journal*, 14(6815):1527-9.

Appendices

Appendix A: Framework of Five Theoretical Approaches

Exploring the AIDS Epidemic in South Africa through the framework of five theoretical traditions

Theoretical Approach*	Sample HIV/AIDS question	Measurable Indicators	Data Sources
Social Structure <ul style="list-style-type: none"> Environment (material, demographic and life circumstances) influences Modernization theory 	Does high poverty increase HIV prevalence in an area? Are women, the young, or urban dwellers at more risk of HIV/AIDS?	Economic class, age, gender, poverty levels, geographic and residential locations, ethnicity	<ul style="list-style-type: none"> SA 1996 and 2001 Census Data: (Demographic data, Percent rural, Percent urban, household conditions (access to phone, toilet) and economic standing (income, expenditure) WVS 1995-97 and 2001 waves: Financial situation, employment, gender attitudes,
Cultural <ul style="list-style-type: none"> Values are “culturally embedded and socially received” African context: communitarian values (group more important than individual), seasonal uncertainty, group solidarity (not based on national identify only) 	Do strong religious beliefs decrease risk of HIV infection? Do more trusting societies have less HIV prevalence?	Interpersonal trust, social tolerance, risk tolerance, national identity, traditional versus modern identity, religious affiliation, individual responsibility	<ul style="list-style-type: none"> WVS 1995-97 and 2001 waves: Religious attitudes, values and beliefs; general trust; national identity, tolerance of groups different than own SA 1998 Demographic and Health Survey
Institutional Influences <ul style="list-style-type: none"> Values driven by principles of formal/informal institutions Tocqueville/Putnam approach 	Does active membership in organisations decrease risk of HIV/AIDS? Are people who attend church often at less risk for HIV infection?	Membership in civic or religious organisations, political and social activism, partisan identification, media exposure, amount of TV watched	<ul style="list-style-type: none"> WVS 1995-97 and 2001 waves: active organizational membership, interest in politics, political activity
Rational Choice <ul style="list-style-type: none"> Values driven by evaluation of performance; behaviour is purposive and considered Perceived benefit of value or behaviour drives action 	Does the prioritization of delayed first sex, condoms use, and monogamy reduce HIV prevalence? Are risk enhancing behaviours more likely to occur in societies with social cohesion?	Reported sexual behaviour	<ul style="list-style-type: none"> SA 1998 Demographic and Health Survey WVS 1995-97 and 2001 waves RHRU 2003 HIV & Sexual Behaviour National Survey
Cognitive Awareness <ul style="list-style-type: none"> Values driven by level of understanding, knowledge, and literacy of situation Cognitive engagement and interest in behavioural, valued situation 	Does level of education influence risk of HIV/AIDS? Does awareness of HIV/AIDS ensure decreased HIV prevalence?	Levels of formal education, access to formal education, media use, political knowledge and activism	<ul style="list-style-type: none"> WVS 2001 waves: education levels, HIV knowledge SA 1996 and 2001 Census: access to formal education, education level, access to media and communication SA 1998 Demographic and Health Survey RHRU 2003 HIV & Sexual Behaviour National Survey

*Source: R. Mattes and M. Bratton (2003) Learning About Democracy in Africa: Awareness, Performance, and Experience. Afrobarometer Paper No. 31. Cape Town: Afrobarometer.

Appendix B: HIV Prevalence Growth Calculations, 3 year

Table B.1 HIV Prevalence Change and Average Growth Rate between 1997 and 2000

	HIV1997	HIV1998	HIV1999	HIV2000	Total Change 1997 to 2000	Average % Growth Rate per year
Gauteng	17.1	22.5	23.9	29.4		
Change per year		5.4	1.4	5.5	12.3	4.10
Limpopo	8.2	11.5	11.4	13.2		
Change per year		3.3	-0.1	1.8	5	1.67
Mpumalanga	22.6	30	27.3	29.7		
Change per year		7.4	-2.7	2.4	7.1	2.37
North West	18.1	21.3	23	22.9		
Change per year		3.2	1.7	-0.1	4.8	1.60
KZN	26.9	32.5	32.5	36.2		
Change per year		5.6	0	3.7	9.3	3.10
Free State	20	22.8	27.9	27.9		
Change per year		2.8	5.1	0	7.9	2.63
Eastern Cape	12.6	15.9	18	20.2		
Change per year		3.3	2.1	2.2	7.6	2.53
Western Cape	6.3	5.2	7.1	8.7		
Change per year		-1.1	1.9	1.6	2.4	0.80
Northern Cape	8.6	9.9	10.1	11.2		
Change per year		1.3	0.2	1.1	2.6	0.87
<i>Yearly Average</i>	<i>15.60</i>	<i>19.07</i>	<i>20.13</i>	<i>22.16</i>		<i>19.67</i>
					<i>National Average Percent Growth</i>	<i>2.19</i>

Above National Average:

Gauteng
Mpumalanga
KZN
Free State
Eastern Cape

Below National Average:

Northern Cape
Western Cape
North West
Limpopo

Appendix C: HIV Prevalence Growth Calculations, 7 year

Table C.1 HIV Prevalence Change and Average Growth Rate between 1997 and 2004										
	HIV1997	HIV1998	HIV1999	HIV2000	HIV2001	HIV2002	HIV2003	HIV2004	Total Change 1997 to 2004	Average % Growth Rate per year
Gauteng	17.1	22.5	23.9	29.4	29.8	31.6	29.6	33.1		
Change per year		5.4	1.4	5.5	0.4	1.8	-2	3.5	16	2.29
Limpopo	8.2	11.5	11.4	13.2	14.5	15.6	17.5	19.3		
Change per year		3.3	-0.1	1.8	1.3	1.1	1.9	1.8	11.1	1.59
Mpumalanga	22.6	30	27.3	29.7	29.2	28.6	32.6	30.8		
Change per year		7.4	-2.7	2.4	-0.5	-0.6	4	-1.8	8.2	1.17
North West	18.1	21.3	23	22.9	25.2	26.2	29.9	26.7		
Change per year		3.2	1.7	-0.1	2.3	1	3.7	-3.2	8.6	1.23
KZN	26.9	32.5	32.5	36.2	33.5	36.5	37.5	40.7		
Change per year		5.6	0	3.7	-2.7	3	1	3.2	13.8	1.97
Free State	20	22.8	27.9	27.9	30.1	28.8	30.1	29.5		
Change per year		2.8	5.1	0	2.2	-1.3	1.3	-0.6	9.5	1.36
Eastern Cape	12.6	15.9	18	20.2	21.7	21.7	23.6	28		
Change per year		3.3	2.1	2.2	1.5	0	1.9	4.4	15.4	2.20
Western Cape	6.3	5.2	7.1	8.7	8.6	12.4	13.1	15.4		
Change per year		-1.1	1.9	1.6	-0.1	3.8	0.7	2.3	9.1	1.30
Northern Cape	8.6	9.9	10.1	11.2	15.9	15.1	16.7	17.6		
Change per year		1.3	0.2	1.1	4.7	-0.8	1.6	0.9	9	1.29
<i>Yearly Average</i>	<i>15.60</i>	<i>19.07</i>	<i>20.13</i>	<i>22.16</i>	<i>23.17</i>	<i>24.06</i>	<i>25.62</i>	<i>26.79</i>		<i>14.39</i>
									<i>National Average Percent Growth</i>	<i>1.60</i>

Above Average:

Gauteng
KZN
Eastern Cape

Below Average:

Limpopo
Mpumalanga
North West
Free State
Western Cape
Northern Cape

Appendix D: Poverty Indicators and Indices

Table D.1 South African National And Provincial 1996 HDI Indicator Measures

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa
Adult Literacy Rate (%) (1996)	98.13	77.70	79.42	73.16	89.17	88.77	76.47	95.76	83.79	85.93
Life Expectancy (years)(1996)	59.62	60.10	53.49	53.29	52.98	52.78	60.41	60.83	55.62	57.04
Gross Pri, Sec, Ter Enrol (%) (1996)	86.88	82.97	84.44	82.37	82.79	88.37	81.87	86.39	82.10	83.88
Real GDP per capita (PPPS)(1996)	27,074	3648	13,700	7988	9125	11,519	6339	18,853	12,214	12,675

Source: October Household Survey (CSS) 1995; and Stats SA, Human Development Index Report, 2001.

Table D.2 South African National and Provincial 1996 HII Indicator Measures

	Gauteng	Limpopo	Mpuma- langa	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (Mean)
Formal dwelling (%)	73.8	62	64.9	69.5	55.3	62.5	46.9	81.3	80.1	66.3
Electric Light	79.4	36.2	56.3	43.7	53.2	56.8	31.2	84.9	68.8	56.7
Tap in dwelling	66.9	17.3	36.5	29.5	39.2	40.2	24.4	75.3	49.7	42.1
Flush or chemical toilet	82.9	13.1	37.8	32	41.7	45.1	30.6	85.8	59.5	47.6
Telephone or cell in dwelling	45.3	7.4	18.2	16.8	26.9	22.9	15.6	55.2	30.8	26.6
Refuse x 1 week	81.4	11.2	37.7	34.3	41.9	60.4	33.8	82.2	67.4	50.0
Education level of Household head	7.1	4.6	5	5.1	5.4	5.5	5.1	7	5.1	5.5
Avg Monthly Hshld Expenditure	3594	1418	1899	1820	2138	1543	1403	3324	2023	2129.1

Source: October Household Survey (CSS) 1995; and Stats SA, Human Development Index Report, 2001.

Table D.3 South African National and Provincial 1996 HCI Indicator Measures

	Gauteng	Limpopo	Mpuma- langa	North West	KwaZulu- Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (Mean)
Avg Monthly Hshld Expenditure	3594	1418	1899	1820	2138	1543	1403	3324	2023	2129.1
Unemployment rates (exp. def.)	28	46	33	38	39	30	49	18	29	34.4
Avg. Hshld Size	3.3	4.6	4.2	4.2	4.5	3.8	4.3	3.7	4	4.1
Proportion of Hshld Children under 5	8.9	13.1	11.6	11.2	11.5	9.5	12	9.6	10.6	10.9

Source: October Household Survey (CSS) 1995; and Stats SA, Human Development Index Report, 2001.

Table D.4 South African National and Provincial 1996 Census Poverty Indicators (%)

	Gauteng	Limpopo	Mpumala-ganga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (Mean)
% households with NO telephone or cell phone in the dwelling	54	93	81	83	73	77	84	45	69	73
% households without toilet facilities	3	21	9	6	15	9	29	5	11	12
Percent in Households With Per Capita Monthly Income <R250, 1996	34	80	68	65	66	66	76	31	59	61
% Households With Per Capita Monthly Expenditure <R250, 1996 (Income & Expenditure Survey)	14	58	54	59	52	62	68	25	53	49
% Households With Per Capita Monthly Income <R800, 1996	34	72	60	56	55	59	68	27	50	53
% Households With Per Capita Monthly Expenditure <R800, 1996	11	36	26	37	24	51	45	12	38	31
% employed people earning R500 per month or less by province	16	41	36	31	28	38	32	18	42	31
% Province Population that is Non-Urban	3	89	61	65	57	31	63	11	30	46

Table D.5 Individual 1996 Census Poverty Measures Correlated with Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996

	% households with NO telephone or cell phone in the dwelling	% employed people earning R500 per month or less by province	% households without toilet facilities	% Households With Per Capita Monthly Income <R250, 1996	% Households With Per Capita Monthly Expenditure <R250, 1996	% Households With Per Capita Monthly Income <R800, 1996	% Households With Per Capita Monthly Expenditure <R800, 1996	% Province Population that is Non-Urban
% households with NO telephone or cell phone in the dwelling	1.000							
% employed people earning R500 per month or less by province	0.761	1.000						
% households without toilet facilities	0.622	0.427	1.000					
% Households With Per Capita Monthly Income <R250, 1996	0.969	0.800	0.728	1.000				
% Households With Per Capita Monthly Expenditure <R250, 1996	0.870	0.809	0.650	0.929	1.000			
% Households With Per Capita Monthly Income <R800, 1996	0.978	0.777	0.737	0.990	0.894	1.000		
% Households With Per Capita Monthly Expenditure <R800, 1996	0.732	0.783	0.519	0.768	0.890	0.764	1.000	
% Province Population that is Non-Urban	0.912	0.616	0.666	0.901	0.767	0.887	0.491	1.000
3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	0.000	-0.382	-0.028	-0.044	-0.219	0.024	-0.176	-0.141
7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004	-0.091	-0.453	0.384	-0.067	-0.235	-0.008	-0.193	-0.102

Appendix E: Religiosity Indicators and Indices

Table E.1 South African National and Provincial 1996 WVS Religious Belief Measures (%)

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (mean)
% who Believe in God	95	100	99	100	98	99	99	99	100	99
% Who Believe in life after death	70	86	73	73	71	68	80	85	69	75
% Who Believe in People have Soul	86	92	88	82	90	92	92	96	89	90
% Who Believe Devil exists	69	82	70	84	68	76	71	82	50	72
% Who Believe in hell	59	71	47	63	65	54	54	77	65	62
% Who Believe in heaven	85	93	94	96	84	91	95	95	92	92
% Who Believe in Sin	81	76	53	73	85	70	80	86	74	75
Religious Belief Index	78	86	75	81	80	78	81	88	77	81

Table E.2 Individual 1996 Census Religious Belief Measures Correlated with Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996

	% who "Yes" Believe in God	% Who "Yes" Believe in life after death	% Who "Yes" Believe in People have Soul	% Who "Yes" Believe Devil exists	% Who "Yes" Believe in hell	% Who "Yes" Believe in heaven	% Who "Yes" Believe in Sin	Religious Belief Index
% who "Yes" Believe in God	1.000							
% Who "Yes" Believe in life after death	0.277	1.000						
% Who "Yes" Believe People have Soul	0.109	0.567	1.000					
% Who "Yes" Believe Devil exists	0.082	0.524	0.083	1.000				
% Who "Yes" Believe in hell	0.105	0.543	0.357	0.237	1.000			
% Who "Yes" Believe in heaven	0.789	0.475	0.055	0.355	-0.021	1.000		
% Who "Yes" Believe in Sin	-0.353	0.307	0.347	0.112	0.680	-0.393	1.000	
Religious Belief Index	0.184	0.842	0.533	0.647	0.798	0.285	0.629	1.000
3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	-0.832	-0.433	-0.248	-0.046	-0.523	-0.698	0.055	-0.436
7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004	-0.715	0.011	0.061	-0.117	-0.093	-0.595	0.573	0.011

Table E.3 South African National and Provincial 1996 WVS Religious Saliency Indicators (%)

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (mean)
% Who mention "Religious Faith" as "Important" for children to learn at home	60	69	72	64	55	67	59	75	79	66
% Who consider "Religious Faith" as "Most important thing" for child to learn at home	29	25	40	33	16	38	22	32	51	32
% Raised in Religious Home	88	88	88	92	91	89	85	88	98	89
% Identify themselves as "Religious Person"	82	82	81	80	77	82	83	83	94	83
% Who Say Religion is "Very" important in Life	53	62	54	63	37	74	65	59	85	61
% Who get comfort and strength from religion.	84	90	87	85	87	95	90	94	95	89
% Who have Confidence In Churches "A Great Deal" or "Quite A Lot"	79	75	83	90	75	95	83	88	93	84
Religious Saliency Index	68	70	72	72	63	77	70	74	85	72

Table E.4 Individual 1996 Census Religious Saliency Measures Correlated with Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996

	% Who mention "Religious Faith" as "Important" for children to learn at home	% Who consider "Religious Faith" as "Most important thing" for child to learn at home	% Who Say Religion is "Very" important in Life	% Who "Yes" get comfort and strength from religion.	% Who have Confidence In Churches "A Great Deal" or "Quite A Lot"	% Identify themselves as "Religious Person"	% Raised in Religious Home	Religious Values (Saliency) Index
% Who mention "Religious Faith" as "Important" for children to learn at home	1.000							
% Who consider "Religious Faith" as "Most important thing" for child to learn at home	0.803	1.000						
% Who Say Religion is "Very" important in Life	0.633	0.732	1.000					
% Who "Yes" get comfort and strength from religion.	0.633	0.417	0.661	1.000				
% Who have Confidence In Churches "A Great Deal" or "Quite A Lot"	0.528	0.747	0.765	0.558	1.000			
% Identify themselves as "Religious Person"	0.685	0.730	0.823	0.600	0.493	1.000		
% Raised in Religious Home	0.429	0.613	0.456	0.261	0.439	0.592	1.000	
Religious Values (Saliency) Index	0.829	0.907	0.918	0.696	0.822	0.852	0.614	1.000
3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	-0.765	-0.448	-0.545	-0.599	-0.461	-0.495	-0.433	-0.640
7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004	-0.759	-0.671	-0.419	-0.384	-0.601	-0.228	-0.443	-0.628

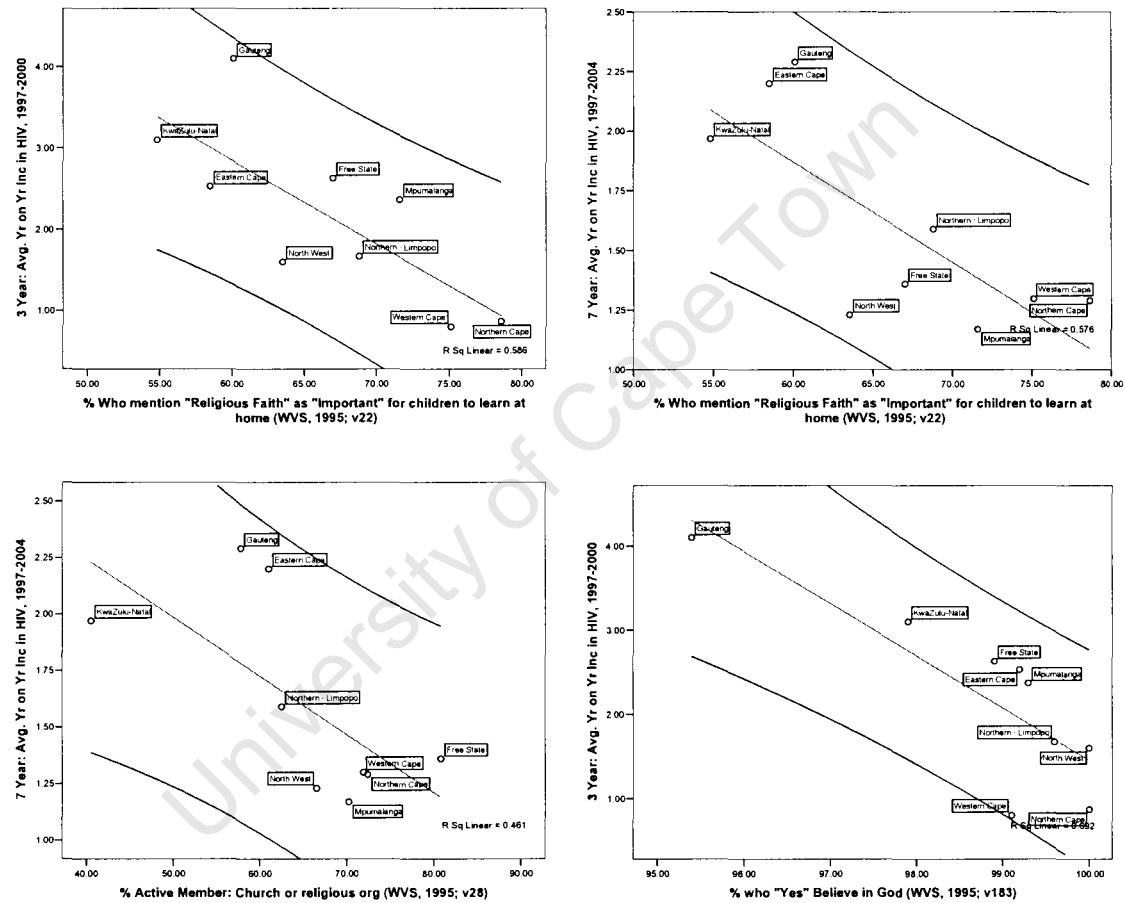
Table E.5 South African National and Provincial 1996 WVS Religious Saliency Indicators (%)

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (average)
% Go to Religious Services Once Week or More	53	62	54	63	37	74	65	59	85	61
% Active Member: Church or religious org	58	63	70	67	41	81	61	72	72	65
Religious Activity Index	55	62	62	65	39	77	63	66	79	63

Table E.6 Individual 1996 Census Religious Activity Measures Correlated with Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996

	% Go to Religious Services Once Week or More	% Active Member: Church or religious org	Religious Activity Index
% Go to Religious Services Once Week or More	1.000		
% Active Member: Church or religious org	0.778	1.000	
Religious Activity Index	0.952	0.933	1.000
3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	-0.545	-0.494	-0.553
7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004	-0.419	-0.679	-0.571

Figure E.1. Scatterplots of 1995 WVS Religiosity Indicators and Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996



Appendix F: Social Capital Indicators and Indices

Table F.1 South African National and Provincial 1996 WVS General and Institutional Trust Measures (%)

	Gauteng	Limpopo	Mpumala-langa	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (mean)
% Trust most people	10	21	14	5	19	17	28	12	12	15
% Who have Confidence in Nat. Government ²⁰	59	76	60	73	64	52	61	34	35	57
% Who have Confidence in Legal System	55	61	51	59	57	56	59	37	57	55
% Who have Confidence in Parliament	56	76	55	64	61	52	63	35	45	56
% Who have Confidence in Civil Service	49	60	43	60	50	46	55	33	31	47
Institutional Trust Index	55	68	52	64	58	51	60	35	42	54

Table F.2 Individual 1996 WVS General and Institutional Trust Measures Correlated with Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996

	% Trust most people	% Who have Confidence in Nat. Govt "	% Who have Confidence in Legal System	% Who have Confidence in Parliament	% Who have Confidence in Civil Service	Institutional Trust Index
% Trust most people	1.000					
% Who have Confidence in Nat. Govt	0.154	1.000				
% Who have Confidence in Legal System	0.263	0.660	1.000			
% Who have Confidence in Parliament	0.342	0.949	0.798	1.000		
% Who have Confidence in Civil Service	0.224	0.951	0.658	0.915	1.000	
Institutional Trust Index	0.252	0.974	0.796	0.985	0.959	1.000
3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	0.168	0.408	0.334	0.329	0.397	0.394
7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004	0.472	0.273	0.327	0.332	0.389	0.344

Table F.3 South African National and Provincial 1996 WVS Local and National Organisational Membership Measures (%)

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (mean)
% Active Member: Sport or recreation org	27	19	15	20	23	17	19	19	15	19
% Active Member: Art, music or educational org	19	15	10	19	16	17	17	11	9	15
Membership Index – Local	23	17	12	19	20	17	18	15	12	17
% Active Member: Labour union	10	7	8	7	6	12	6	12	12	9
% Active Member: Political Party	16	13	10	12	7	15	13	13	14	12
Membership Index – National	13	10	9	10	6	13	9	12	13	11

²⁰ These WVS confidence scale options included “A great deal”, “Quite a Lot”, “Not very much”, “None at All” or “Don’t know”. These confidence measures were calculated by adding the percents of respondents who answered “A great deal” or “Quite a Lot” to each question.

Table F.4 Individual 1996 WVS Local and National Organisational Membership Correlated with Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996

	% Active Member: Sport or recreation org	% Active Member: Art, music or educational org	% Active Member; Labour union	% Active Member; Political Party	Membership Index - Local	Membership Index - National
% Active Member: Sport or recreation org	1.000					
% Active Member: Art, music or educational org	0.699	1.000				
% Active Member: Labour union	-0.231	-0.467	1.000			
% Active Member; Political Party	0.007	0.131	0.599	1.000		
Membership Index - Local	0.920	0.923	-0.380	0.075	1.000	
Membership Index - National	-0.125	-0.186	0.893	0.895	-0.169	1.000
3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	0.677	0.648	-0.363	-0.071	0.718	-0.242
7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004	0.756	0.627	-0.436	0.029	0.749	-0.226

Table F.5 South African National and Provincial 1996 WVS Trustworthiness (Reciprocity) Measures (%)

	Gauteng	Limpopo	Mpumalanga	North West	KwaZulu-Natal	Free State	Eastern Cape	Western Cape	Northern Cape	South Africa (mean)
Claiming government benefits not entitled (% Never Justifiable)	59	60	67	65	67	45	47	77	71	62
Avoiding a fare on public transport (% Never Justifiable)	61	61	65	68	71	52	40	75	74	63
Cheating on taxes if you have a chance (% Never Justifiable)	61	61	70	63	70	56	47	82	86	66
Buying something you knew was stolen (% Never Justifiable)	69	64	75	77	80	56	59	82	80	71
Accepting a bribe in the course of their duties (% Never Justifiable)	72	66	64	73	81	62	61	84	69	70
Trustworthiness (Reciprocity) Index Score	64	62	68	69	74	54	51	80	76	66

Table F.6 Individual 1996 WVS Trustworthiness (Reciprocity) Measures Correlated with Average Year on Year Percent Increase in HIV Prevalence, 3 years and 7 years after 1996

	Claiming government benefits not entitled to (% Never Just)	Avoiding a fare on public transport (% Never Just.)	Cheating on taxes if you have a chance (% Never Just.)	Buying something you knew was stolen (% Never Just.,)	Accepting a bribe in the course of their duties (% Never Just.)	Trustworthiness (Reciprocity) Index
Claiming government benefits not entitled to (% Never Justifiable, WVS 1996)	1.000					
Avoiding a fare on public transport (% Never Justifiable)	0.937	1.000				
Cheating on taxes if you have a chance (% Never Justifiable)	0.911	0.911	1.000			
Buying something you knew was stolen (% Never Justifiable)	0.954	0.902	0.852	1.000		
Accepting a bribe in the course of their duties (% Never Justifiable)	0.738	0.749	0.618	0.774	1.000	
Trustworthiness (Reciprocity) Index	0.977	0.970	0.934	0.960	0.813	1.000
3 Year: Avg. Yr on Yr Inc in HIV, 1997-2000	-0.518	-0.443	-0.573	-0.385	-0.167	-0.463
7 Year: Avg. Yr on Yr Inc in HIV, 1997-2004	-0.429	-0.486	-0.506	-0.332	0.002	-0.397

University of Cape Town