

## **ABSTRACT**

Title of Dissertation: Trust, Commitment, Fidelity, and Condom Use among Young Adults in Tanzania

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With an estimated 7 percent of Tanzanian adults HIV positive and no cure or vaccine available, preventing HIV infection remains central to fighting the AIDS epidemic. For sexually active individuals there are two ways to avoid HIV infection: fidelity with an uninfected partner or consistent condom use. Trust and commitment play a complex but critical role in both fidelity and condom use. Research on the link between trust and condom use is emerging, yet the relationship between trust, commitment, and fidelity has yet to be explored. Of the three standard methods of AIDS prevention—abstinence, fidelity, and condom use—fidelity remains relatively under-researched. This dissertation aims to improve our understanding of trust and commitment in Tanzania and the relationship that trust and commitment have with fidelity and condom use using multiple theories and multiple methods (semi-structured in-depth interviews and in-person survey interviews).

Analysis of in-depth interviews with young residents of Mtoni, Dar es Salaam suggests that the youth place an important value on satisfaction with their relationship, feeling that their partners understand them, being able to rely on their partners for instrumental and emotional support, and their partner's sexual fidelity.

The youth in Mtoni often found it difficult to differentiate trust from commitment and trust from fidelity.

Path analysis suggests that equity theory and investment theory do not accurately describe the development of commitment among Tanzanian youth. Identity theory, however, may accurately explain the development of trust and commitment among Tanzanian youth. We found associations in our data that are consistent with the identity theory model.

Analysis of the in-depth interviews suggested that sexual fidelity, trust, and commitment are important to stable relationships yet that once sexual fidelity, trust, and commitment are established, the couple is unlikely to use condoms. However, the associations expected between these variables were not clearly evident in the quantitative data. A generalized trust in one's partner was not found to be associated with a lower level of condom use. Similarly, we did not find that a general trust in a partner or a general feeling of commitment was related to fidelity.

Trust, Commitment, Fidelity, and Condom Use among Young Adults  
in Tanzania

by

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## **CHAPTER 1: INTRODUCTION**

For sexually active individuals there are two ways to avoid HIV infection: long-term fidelity with an uninfected partner or consistent condom use. Trust and commitment play a complex but critical role in both fidelity and condom use. While trust in and commitment to one's partner are often barriers to condom use (Agha, Kusanthan, Longfield, Klein, and Berman 2002), they are likely prerequisites for long-term fidelity. Research on the link between trust and condom use is emerging (Klein and Coombes 2005), yet the relationship between trust, commitment, and long-term fidelity has yet to be explored. In fact, of the three standard methods of preventing the sexual transmission of HIV—abstinence, fidelity, and condom use—fidelity remains relatively under-researched. For HIV prevention to better address couples the relationship that trust and commitment have with condom use and fidelity must be better understood.

Across a variety of cultures and historic periods a common response to risk is for individuals to identify the threat as not relevant for them—others are to blame and others are at risk (Joffe 1999). This response invokes the notions of group identities in the form of “we” and “them.” In a broader sense, this dissertation seeks to understand how individuals develop trust and commitment in a context where having sexual partners and becoming a “we” involves managing substantial risk. The formation of trust, commitment, and a sense of “we-ness” are often studied in contexts where the potential costs of broken trust and commitment do not carry the risk of a fatal illness. Developing committed and trusting relationships has an added layer of complexity for individuals living with the lived realities and risks of the AIDS epidemic in sub-Saharan Africa. Individuals in areas with generalized epidemics—where the HIV prevalence rate is 5



percent or higher—can no longer identify risky partners as those in the traditional high-risk groups and must consider the possibility that any partner could be risky.

In sub-Saharan Africa the potential costs of broken trust and commitment include many of the same emotional and psychological costs individuals face in Western contexts, as well as a greater likelihood of the potential health costs of HIV infection. In a context where marriage is nearly universal and an important element in the transition to adulthood, individuals must manage their risk of infection through condom use or mutual fidelity with an uninfected partner while they search for a spouse. Requesting to use condoms imply that either an individual or their partner has been exposed to risk or cannot be trusted to keep the couple free from infection. This implication violates a sense of “we-ness” and may imply a lack of trust in a partner or commitment to the relationship. While relying on mutual fidelity implies an element of “we-ness,” trust, and commitment, relying on condom use implies an element of “me-ness,” distrust, and lack of commitment.

In this high-risk context we seek to understand how individuals come to trust and be committed to each other. This dissertation research aims to improve our understanding of trust and commitment between couples and the relationship that trust and commitment have with fidelity and condom use using multiple theories (equity, investment, and identity) and multiple methods (semi-structured in-depth interviews and in-person survey interviews).

For the in-person survey interviews, we use data from a household based survey fielded in Tanzania by Population Services International (PSI). This in-person, household-based survey provides the empirical basis for testing and quantifying the

relationship between the elements of trust, commitment, and preventive behavior—fidelity and condom use.

The semi-structured in-depth interviews are used to explore the youth in Mtoni, Dar es Salaam's understandings of trust, commitment, condom use, and fidelity. Participants' narratives of their relationships shed light on the process through which trust and commitment develop and how, once developed, they are related to condom use and fidelity. The in-depth interviews conducted prior to the survey interviews generated insight and questions for the household survey. This research takes advantage of the synergies between in-depth interviews and quantitative surveys to improve our understanding of the relationship between trust, commitment, fidelity, and condom use in a region where an improved understanding of such constructs has policy implications that will impact young people's lives.

### ***Aims***

- 1) The first aim is to investigate how trust and commitment develop in the relationships of the young residents of Mtoni, Dar es Salaam through analysis of the youth's narratives.
- 2) The second aim is to test social psychological theories of the development of trust and commitment through path analysis of survey data collected in Tanzania.
- 3) The third aim is to test the relationship that trust and commitment have with condom use and fidelity through multivariate logistic regressions.

### ***Background and significance***

This dissertation project uses concepts and theoretical perspectives from public health and two areas of sociology: demography and social psychology. Public health

specialists often focus on abstinence, fidelity, and condom use for preventing HIV transmission in regions such as sub-Saharan Africa where heterosexual sex is the main means of transmission (UNAIDS 2004). With a reported median age at first sex of 17.3 years for Tanzanian women aged 25 to 29 and of 18.2 for Tanzanian men aged 25 to 29 as measured by the 2004 Tanzania Demographic and Health Survey (DHS) (ORC Macro 2006), many young adults no longer rely on abstinence to prevent HIV infection. Youth aged 15 to 24 in Tanzania are considered an important target for the prevention of HIV due to their riskier sexual behavior and, particularly at younger ages, their relatively low rates of HIV infection. The HIV prevalence, as measured by the 2003-2004 Tanzania HIV/AIDS Indicator Survey (THIS), is 2.1 percent for Tanzanians aged 15 to 19 (Tanzania Commission for AIDS (TACAIDS), National Bureau of Statistics (NBS), and ORC Macro 2005). The prevalence among Tanzanians aged 20 to 24 is 5.2 percent. While a prevalence of 5.2 percent is not low in absolute terms, it is much lower than the 10.8 percent of adults aged 30 to 44 who are HIV positive. According to the 2003-2004 THIS, women aged 15 to 24 and men aged 20 to 24 reported the highest rates of having multiple or non-regular partners (of women aged 15 to 49 and men aged 15 to 59, (Tanzania Commission for AIDS (TACAIDS) et al. 2005). Despite this high rate of multiple partners, fewer than half of youth aged 15 to 24 reported condom use in their last sex with a non-marital, non-cohabiting partner (Tanzania Commission for AIDS (TACAIDS) et al. 2005).

For young adults in sub-Saharan Africa, the main reason for not using condoms is trusting one's partner (Agha et al. 2002; Plummer et al. 2006). Focus group discussions on the meaning of trust and how it interferes with condom use among young adults in

various urban centers in the region, including discussions in Dar es Salaam, suggest that young people refer to a partner's general characteristics and behaviors to determine whether a partner is deserving of their sexual trust (Longfield, Klein, and Berman 2002). A generalized interpersonal trust in one's partner reduces the feelings of risk despite not knowing a partner's sexual history or HIV status. Partners feel safe because they generally "trust" that their partner has goodwill toward them and would not intentionally infect them.

Fidelity is a relatively under-researched area of AIDS prevention and the determinants of fidelity remain relatively unknown. Marriage, a research area long-studied by demographers, is assumed to be protective against HIV. However, despite the notion that marriage is protective, in urban areas of Tanzania 12 percent of married couples are discordant (Tanzania Commission for AIDS (TACAIDS) et al. 2005), that is, one partner is HIV positive while the other is not. Given such a high rate of discordance, HIV prevention remains important between married partners.

Marriage in Africa is often a complex process, with the beginning of unions often difficult to specify (Meekers 1992). Due to this complexity, conventionally there is no differentiation between non-marital cohabitation and marriage in many quantitative analyses. While some researchers use the more precise term "in union" to categorize marital status, many refer to all individuals who are cohabiting as "married." Nonetheless, marriage or being in a union is nearly universal in Tanzania, with only 2 percent of women aged 35 to 39 and 1 percent of men aged 40 to 44 reporting that they have never been married in the 2004-2005 DHS survey (ORC Macro 2006). While there

have been substantial changes in how unions are formed, the proportion in these age groups who had not entered unions has not changed in the past decade.

In the earliest formations of social psychology, Mead (1967) suggests that interaction emerges because individuals cannot fulfill all of their basic needs independent of others. Reproduction, shelter, and economic security are three basic needs often met through marriages or stable unions in Tanzania (Stambach 2000). Stable unions form the most basic of building blocks of society, yet can involve any mixture of cooperation, maximization of benefits, deceit, and opportunism. While marriage may provide an array of benefits to individuals (Waite 1995; Cherlin 2000), it also involves tradeoffs between partners (Pollak 2000). Married individuals use “bound rationality” when bargaining with each other due to constraints on information, investments in the relationship, barriers to entry/exit, and external factors, such as social norms (Cherlin 2000).

***Research location: Tanzania***

This research was conducted in Tanzania (See Appendix A: Map of Dar es Salaam, Tanzania). The in-depth interviews were conducted in Mtoni, a ward in Dar es Salaam, Tanzania. The survey data stem from PSI/Tanzania’s nationally representative TRaC survey.

Dar es Salaam, located on Indian Ocean, is largest city in Tanzania and the financial capital of the country. Dar es Salaam has a population density of approximately 1,793 people per square kilometer, an area of 165 km<sup>2</sup>, and had about 2,497,940 inhabitants according to the 2002 census (National Bureau of Statistics 2002).

Dar es Salaam is accessible by car, bus, train, and international airport. Due to its proximity to Zanzibar, Mt. Kilimanjaro, and game parks, tourism is an important business

in Dar es Salaam. Migrant workers live and work in Dar es Salaam, only returning to their rural homestead and families to visit. The extent of migration and tourism make Dar es Salaam a key urban center for the prevention of HIV.

Dar es Salaam, Tanzania was selected as the location for the in-depth interviews for multiple reasons. First, Dar es Salaam has an HIV prevalence rate of 11 percent, making it a city where research on HIV prevention is of the utmost importance (ORC Macro 2005). Second, PSI fielded the TRaC survey in Tanzania from February through May of 2007. As PSI's office in Tanzania is located in Dar es Salaam, this allowed us to conduct the in-depth interviews and be in close proximity to the PSI office in order to assist with the design of PSI's household survey. Mtoni was selected as the ward for the in-depth interviews due to the economic and ethnic heterogeneity of the population residing in Mtoni.

Tanzania is located along the coast of the Indian Ocean, bordering Kenya, Uganda, Rwanda, Burundi, the Democratic Republic of the Congo, Zambia, Malawi and Mozambique. The climate and geography of Tanzania are varied. Within the borders of Tanzania lie the highest (Mt. Kilimanjaro) and lowest (bottom of Lake Tanganyika) points in Africa. Additionally, the Great Rift Valley crosses through northern Tanzania, adjacent to the Serengeti.

There are two rainy seasons in Tanzania. While the rains come to each region at slightly different times, in Dar es Salaam, the short rains come from December to January and the long rains come from April to May. Tanzania suffers from drought and floods. During the rainy season transportation becomes difficult and many existing roads flood and are not passable without four-wheel drive.

### *History of Tanzania*

Mainland Tanzania (then called Tanganyika) gained independence from the British in 1961. Zanzibar, the archipelago off the coast of mainland Tanzania, became independent after overthrowing the Sultanate in 1964. Within a few months of overthrowing the Sultanate, Zanzibar joined Tanganyika to form the United Republic of Tanzania. Tanzania has 26 regions, including the 5 regions of Zanzibar. Tanzania is ruled under a multi-party democratic system of government.

Tanzania has many relatively small ethnic groups, each with its own language. There are 127 languages spoken in Tanzania with varying lexical similarity. Most Tanzanians speak the language of their village in their home, and use Swahili in the early years of their education, for commerce, and in low levels of government. Swahili is the language of the coastal people (*Swahili* means coast) and was spread from Zanzibar and the mainland coast through regional commerce. British and German colonialists supported the formal use of Swahili in Tanzania, Zanzibar, Uganda, and Kenya. After independence, the elected president Julius Nyerere declared Swahili the national language of Tanganyika. Swahili is the lingua franca and, along with English, an official language of Tanzania. English is used in secondary school and, in conjunction with Swahili, at the national level of government. The lack of a clearly dominant ethnic group and the universality of Swahili are credited with the lack of ethnic conflict in Tanzania.

### *People of Tanzania*

There were approximately 34.4 million Tanzanians in 2002 according to the 2002 National Census (National Bureau of Statistics 2002). Fertility remains high in Tanzania, with a total fertility rate (TFR) of 5.7 births per woman (National Bureau of Statistics

(NBS) [Tanzania] and ORC Macro 2005). There is a substantial difference in fertility between urban and rural areas, with urban women having a TFR of 3.6 compared with rural women who have a TFR of 6.5. The high fertility in Tanzania has led to a young population structure: nearly half of Tanzanians are under age 15 (47%, National Bureau of Statistics (NBS) [Tanzania] and ORC Macro 2005).

Universal education has yet to be achieved in Tanzania. Rates of female education remain lower than rates of male education in Tanzania, with nearly a quarter of young women (22%) and 14 percent of young men aged 15 to 24 reporting that they have had no education (National Bureau of Statistics (NBS) [Tanzania] and ORC Macro 2005). Levels of education vary by region and socioeconomic status. Rates of having never attended school are lowest in the regions of Dar es Salaam (12% for males and 14% for females) and Kilimanjaro (12% for males and 15% for females). Rates of having never attended school are highest in the north of Pemba Island (37% for males and 47% for females) and the mainland region of Tabora (44% for males and 55% for females). Only 58 percent of primary school-age (7-13 years) children from families in the poorest wealth quintile are in school, compared with 88 percent of primary school-age (7-13 years) children from the wealthiest quintile.

In 2006, Tanzania was 162<sup>nd</sup> of the 177 countries ranked in terms of the human development index (United Nations Development Programme 2006). As would be expected from a fairly poor country, the living conditions and socioeconomic status, as measured by an amenities and possessions index, reflects a high rate of poverty. Approximately 6 out of 10 households in urban areas did not have electricity according to the 2004-2005 DHS (62%, National Bureau of Statistics (NBS) [Tanzania] and ORC



Macro 2005) and nationally, only one in ten households (11%) had electricity. There are substantial differences in access to water by rural or urban residence in Tanzania, with two-thirds of urban residents (68%) having a water source within 15 minutes of their residence, compared with only a quarter of rural residents (29%).

## **CHAPTER 2: LITERATURE REVIEW AND THEORETICAL PERSPECTIVES**

### ***Theoretical perspectives on trust and commitment***

Researchers often hesitate to use Western theories in the African context. However, various social psychological models of health behavior have proven effective predictors of health behavior in sub-Saharan Africa, when adapted to the local context. For example, Dyer and colleagues (2005) used Derogatis' measure of distress in South Africa to study women's psychological distress due to infertility. Perkel (1992) developed and tested an AIDS Psychosocial Scale in South Africa that included factors such as the self-concept, rationalization, peer pressure, locus of control, and self-efficacy. Results show that the scale was both reliable and valid in this context. Further, research in South Africa has included social identities. Campbell (1997) demonstrates how the construction of masculine identities by gold miners in the Johannesburg area leaves them vulnerable for HIV infection.

We used information from the qualitative and cognitive interviews to adapt the theoretical models and survey questions to the local context. Three dominant social psychological perspectives that address trust and commitment guide this analysis: two perspectives based in social exchange theory (Homans 1961; Leik and Leik 1977; Sprecher 1988; Sprecher 2001) and one perspective based in identity theory (Burke and Stets 1999).

#### ***Social exchange theory***

Social exchange includes the exchange of gifts of material goods, services, emotion, or behavior with another individual (Molm, Takahashi, and Peterson 2000). Leik and Leik (1977) built a model of interpersonal commitment based on Homans'

social exchange theory. In their theory, interaction, in the form of exchange, leads to sentiment. However, when individuals monitor the returns on investments with one partner and compare them with the returns on investments with alternative exchange partners, there is the potential for changing exchange partners.

Leik and Leik describe four levels of involvement between exchange partners. The first level is no relationship; this is when an individual is seeking an exchange partner. The next level of commitment is a strict exchange. In a strict exchange, an exchange relationship has begun and partners expect prompt returns on their investments while they continue to look for better exchange partners. There is no trust in strict exchanges and the exchange will likely end if there is a delay or decrease in a partner's returns on investments. The third level of interaction is confidence, when partners have begun to trust each other and believe that their partner will meet the exchange terms. Partners at the confidence level begin to look for long-term benefits from the exchange, which can allow the exchange to be maintained despite short-term difficulties. Nonetheless, at this stage partners continue to monitor the alternatives to their exchange. Ultimately, the highest level of involvement with an exchange partner occurs when there is "an unwillingness to consider any exchange partner other than that of the current relationship" (Leik and Leik 1977: p301-2). Reaching this commitment stage involves "[d]eciding that one's partner is so essential that alternatives will not even be noticed" (p 308) and consequently, alternatives to the current exchange relationship are not monitored.

In Leik and Leik's model, exchange relationships may progress to each stage, however there is greater force toward dissolution than commitment: strict exchanges are

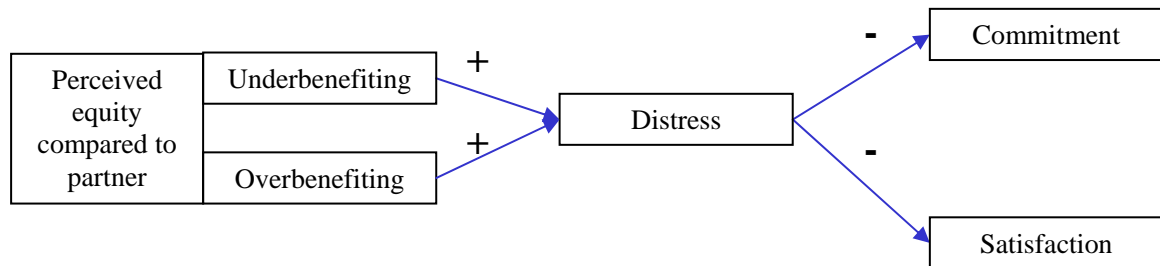
more likely to end than progress to confidence and confidence is more likely to revert to strict exchange than develop into commitment. However, while exchange relationships have a greater force toward dissolution, each individual experiences multiple exchange relationships and most individuals eventually form committed relationships.

The possibility for committed exchanges to dissolve is accounted for in Leik and Leik's theoretical model. A committed exchange with one partner can be challenged by a committed exchange with another partner. To use Leik and Leik's example, commitment to a marital partner may be challenged by commitment to a work partner if one's involvement at work increases. In this situation the individual may become suddenly aware of alternative marital partners and can choose to either ignore the knowledge of alternatives or to reduce their marital exchange from commitment to confidence.

Leik and Leik's model of interpersonal commitment suggests that the distinction between a committed exchange relationship and all other exchange relationships is that while all other relationships involve monitoring the alternatives to the given exchange, committed exchange relationships do not. As such, commitment prevents the individual from pursuing other, potentially more advantageous exchanges.

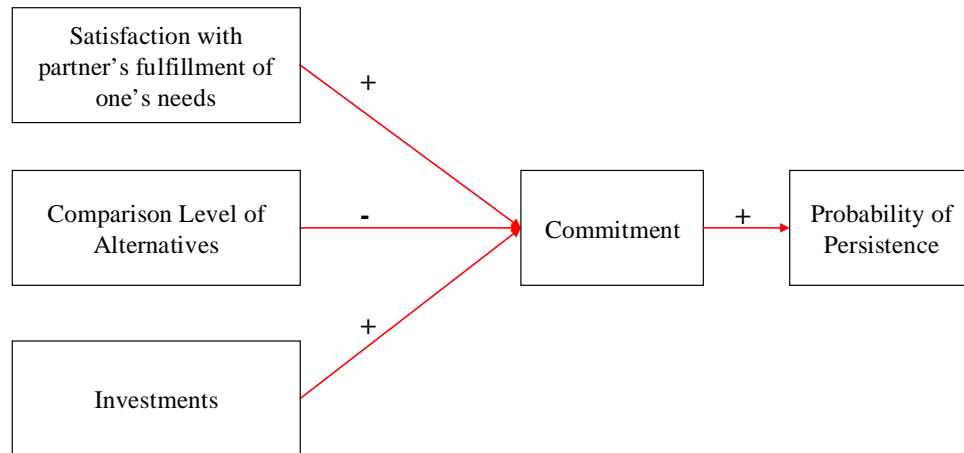
Subsequent work on the development of commitment in exchange relationships can be divided into two categories: those focusing on the equity of the exchange (distributive justice, e.g., Walster (Hatfield), Walster, and Berscheid 1978; Sprecher 2001) and those focusing on investments in the exchange relationship (interdependence theory, e.g., Kelley and Thibault 1978; Rusbult 1983). Equity refers to the individual's perception of their contributions and rewards compared with their partner's contributions and rewards (see figure 1). If an individual believes that they are receiving more rewards

and contributing less than their partner, then the individual has overbenefiting inequity (Sprecher 2001). Conversely, if an individual believes that they are receiving fewer rewards and contributing more than their partner than the individual has underbenefiting inequity (Sprecher 2001). While both states of inequity have been theorized to lead to distress and lower satisfaction and commitment (Walster (Hatfield) et al. 1978; Sprecher 2001), analyses have found only underbenefiting inequity to be associated with lower satisfaction and commitment (Sprecher 2001).



*Figure 1: Equity theory and commitment*

The second area of theory on commitment in exchange relations is investment theory. Taking interdependence theory as a starting point, investment theory includes notions of dependency, satisfaction, comparison level of alternatives, and investments (Rusbult 1983; see figure 2, Rusbult 1983). Interdependence theory suggests that the interdependence within a relationship explains the likelihood that a relationship will continue (Rusbult, Martz, and Agnew 1998). While interdependence is a characteristic of the relationship, dependence is the extent to which an individual needs the relationship. An individual's dependence on a relationship increases with their satisfaction with their partner's fulfillment of their needs and decreases with their perceptions of the quality of alternatives to their relationship.



*Figure 2: Investment theory and commitment*

Investment theory suggests that satisfaction and the availability of alternatives—as described in interdependence theory—cannot sufficiently explain the persistence of relationships (Rusbult et al. 1998). According to investment theory, the greater the investments in the relationship an individual has made that would be lost if the relationship ended, the greater the costs of ending the relationship and the greater the individual’s dependence on the relationship. Investments can include resources such as time, mutual friends, identity, or children. According to investment theory, dependence includes an individual’s satisfaction with their partner’s fulfillment of their needs, perceptions of the quality of alternatives to their relationship, and investments in the relationship. In investment theory, commitment is seen as an “allegiance to the source of dependence” (Rusbult et al. 1998: 360) with committed individuals more likely to remain in their relationship. In the theoretical model, satisfaction and investments are positively

related to commitment, while comparison level of alternatives is negatively related to commitment.

Finally, in investment theory, commitment is seen as evoking relationship maintenance behaviors instead of behavior that is in the individual's self-interest. This shift from behavior that is in the individual's self-interest to behavior that is in the best interest of the relationship is called the transformation of motivation (Kelley and Thibault 1978; Holmes 1981). An important relationship maintenance behavior that commitment appears to play a role in evoking is the inclination to avoid attractive alternative partners. Based on this research, commitment will likely evoke sexual fidelity in individuals.

Equity theory and investment theory each contains a notion of comparison: in equity theory the basis of comparison is one's partner, in investment theory the basis of comparison is what one expects for one's self from one's partner. Both view satisfaction as an important mechanism through which social exchange variables influence commitment. While not explicit in either equity or investment theories, trust or a lack of trust likely plays a role in both models. Trust allows the individual to look for long-term costs, rewards, and balance of benefits between partners when evaluating satisfaction. Further, trust has yet to be developed with an alternative partner, which increases the cost of changing partners relative to remaining with a trusted partner.

Trust is the expectation that a partner will behave benignly (Molm et al. 2000: 1402). There are higher levels of trust in relationships that are reciprocal, that is, those without explicitly negotiated transactions. For instance, relationships in which both partners are faithful, without an explicit discussion of fidelity, are expected to have higher levels of trust than relationships in which partners have discussed mutual fidelity

despite both situations lacking evidence of infidelity. Expectations that a partner will behave benignly increase each time partners have the opportunity to behave malignantly, yet do not (Molm et al. 2000). Over time, as partners repeatedly behave benignly towards each other they increase both the trust they have for each other and the risks they are willing to take with each other.

Partners have assurances in exchanges when an incentive structure encourages benign behavior on the part of both partners (Molm et al. 2000: 1403). Assurances can stem from legal or normative sanctions on an individual's behavior. Different types of relationships may have unique legal or normative sanctions tied to them. Alternatively, individuals can increase assurances in their relationships by establishing a disincentive structure by making the consequences of violating trust explicit.

It would appear that as trust increases, one's caution (the behavioral preference to use condoms or ensure the fidelity of a partner) in the relationship would decrease. This does not need to be the case (Miller and Mitamura 2003). An individual can trust a partner but have a behavioral preference for condom use due to other factors, such as a high HIV rate in the area. Further, translating interpersonal trust into a low risk perception and low level of caution relies heavily on an individual's knowledge of their partner's HIV status. Most young Tanzanians do not know their HIV status. Only 11.4 percent of females and 6.4 percent of males aged 15 to 24 have been tested and received the results (National Bureau of Statistics (NBS) [Tanzania] and ORC Macro 2005). While neither equity theory nor investment theory explicitly includes trust in the model of the development of commitment, it is likely that trust in a partner develops as the exchange relationship continues.



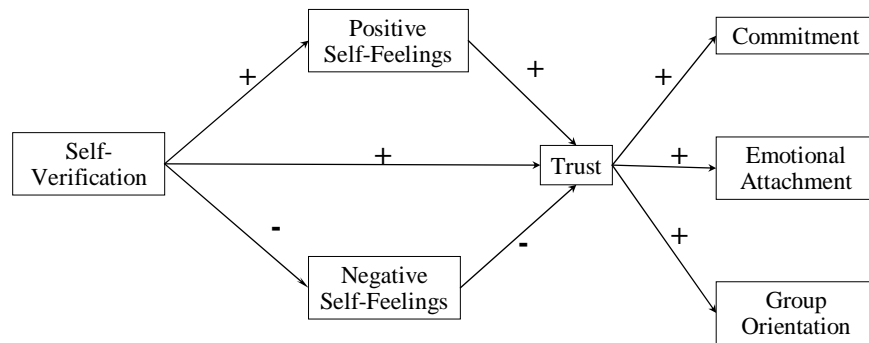
### *Identity theory*

Sociological social psychologists often focus on the individual level identities that include the social categories used to describe “who I am” as opposed to the collective level identities that refer to an individual’s identification with a group or social category, used to describe “who we are” (Thoits and Virshup 1997: 106). Identity theory addresses an individual’s interactions with the self, others, and social groups. There are two traditions of identity theory at the individual level in social psychology (Stryker and Burke 2000). The first, Stryker’s identity theory, aims to explain why individuals perform one role instead of another role when there is more than one role expectation in a given situation (Stryker and Burke 2000). Stryker argues that an individual’s identity consists of many hierarchical identities. Identities are weighted by salience—the probability of invoking the identity—and prominence—the strength of feeling associated with the identity (Stryker and Burke 2000). Role commitment, that is the number and quality of relationships tied to an identity, increases the salience of the identity (Nuttbrock & Freudiger 1991; Stryker & Burke 2000). Roles are “linked to the social positions within the social structure” while identities are “internalized meanings and expectations associated with the role” (Stryker and Burke 2000: 289). The second identity theory, put forward by Burke and his colleagues, focuses on the internalized meanings associated with identities and how an individual’s set of meanings are verified by others. Stryker and Burke’s respective identity theories “[e]ach provides a context for the other: the relation of social structures to identities influences the process of self-verification, while the process of self-verification creates and sustains social structures” (Stryker and Burke

2000: 284). Recent advances in Burke and colleagues' identity theory and the process of self-verification inform the development of trust and commitment between individuals.

In contrast with the social exchange based perspective of trust, Burke and Stets view trust "as an important mechanism through which self-verification brings about commitment" (1999: 347). Burke and Stets argue that exchange theorists often ignore the possibility of deceit and opportunism in exchanges. A major strength of Burke and colleagues' identity theory is that it views identity as a process.

There are four components of Burke's self-verification process: 1) an identity standard or set of meanings, 2) input from the environment or situation (including reflected appraisals and appraisals from others), 3) a process that compares the meanings and the input from the environment or situation, and 4) an output of meaningful behavior (Burke 1991; Burke 1997; Stryker and Burke 2000). Self-verification is a cognitive process where the individual compares their identity standard in a situation to the input from others, the environment, or situation. If there is incongruence between an individual's identity standard and the input received, individuals modify their behavior to change the input received from others, the environment, or situation in order to bring that input into congruence with their identity standard. Identity theory tends to see the individual as being effective at creating behavior that brings inputs into congruence with their identity standard. Although self-verification appears largely cognitive, the process has both cognitive and emotional responses. The emotional responses to self-verification by a partner are theorized to influence levels of trust, commitment, emotional attachment, and group orientation (see figure 3).



*Figure 3: Self-verification, trust, and commitment process (Burke and Stets 1999)*

Ultimately, when the individual receives verification, the individual begins to see the other as predictable and dependable, which in turn leads directly to trust in and dependence on the other. Further, when an identity is verified, Burke and Stets (1999) argue the individual will have an increase in positive self-feelings: self-esteem (feeling good about one's self) and mastery (feeling that outcomes are within one's personal control). When the identity is not verified, the individual will have a decrease in trust and an increase in negative self-feelings: depression and distress.

Trusting another individual involves risk-taking. Individuals with higher self-esteem and individuals with a greater sense of mastery are more likely to be willing to extend trust to another because they are more likely to feel they can overcome the potential costs of broken trust. Positive self-feelings from the self-verification process should result in an increase in trust in the other who has verified the individual's identity and negative self-feelings should result in a decrease in trust in the other who has failed to verify the individual's identity. Positive self-feelings operate through trust to

contribute to the development of committed relationships, positive emotional attachments, and a group orientation.

Trust may be viewed as a resource available to relationships facing difficulties. Relying on identity theory and the self-verification process, Cast and Burke (2002) developed a comprehensive theory of self-esteem, suggesting that self-esteem is accumulated through self-verification. When self-verification is difficult, an individual's self-esteem buffers the negative effects of failed verification, allowing the relationship to be maintained. Unlike self-esteem, trust is likely a psychological resource available to the couple as a unit, as well as to each individual in the relationship.

#### *Review of social exchange theory and identity theory*

As discussed above, social exchange and identity theory are the dominant social psychological perspectives that address trust and commitment. Both theories start from the base that establishing commitment involves “[d]eciding that one’s partner is so essential that alternatives will not even be noticed” (p 308) and alternatives to the current relationship are not monitored.

Both social exchange theory and identity theory allow for a dynamic view of interaction between partners. In social exchange theory, the exchange may progress from an exchange relationship with little to no trust in one’s partner and involves the constant monitoring of alternatives to the given exchange, to an exchange relationship with trust and commitment where the alternatives to the current exchange relationship are not monitored (Leik and Leik 1977). Burke and colleagues view identity as a process that is a “continuously operating, self-adjusting, feedback loop” (Burke 1991: 840). The model of

the self-verification process allows for a dynamic view of the self and of interactions between the self and others.

In the self-verification process, positive self-feelings emerge when there is congruence between self-meanings and inputs from the environment. When there is not congruence between self-meanings and inputs from the environment, a feeling of distress emerges. Burke and Stets argue that taken together, the self-verification process and the emotions emerging from the process influence the level of trust in one's partner. Finally, higher levels of trust in one's partner are associated with commitment, emotional attachment, and a group orientation.

There are a number of strengths in using Burke's identity theory to guide an analysis of the development of trust and commitment between partners. First, the model of self-verification explicitly brings emotion into the development of commitment to another. Further, in relying on the self-verification motive, as opposed to the self-enhancement motive, Burke's model can explain how positive events can cause distress to individuals with low self-esteem. For example, if a woman sees herself as a bad financial planner and her husband gives her feedback that she has recently been a good financial planner, Burke's model predicts that this incongruence will lead to distress for the woman. We could imagine a number of circumstances where it would make sense for her to feel distress, such as if she feared that she could not sustain behavior that is consistent with his high appraisal of her financial planning.

Nonetheless, Burke's model is not without weaknesses. The main weakness relevant to this dissertation is that the model assumes that the identity triggered in an interaction (parent identity or partner identity) is high in salience and prominence.

Returning to the financial planner example, if a woman does not often invoke her financial planner identity and does not have strong feelings associated with the identity, having that identity fail to be verified may not lead to changes in her self-feelings, and in turn, her trust and commitment to her partner.

Both social exchange theory and the self-verification process suffer from difficulties in proving causality. For example, while negative emotions emerge from failure to verify one's spousal identity, that failure may be due to preexisting low levels of commitment to one's spouse identity.

Both theories are limited in their discussion of the external constraints on individuals. For example, if having one's father identity verified relies on one's wife signaling that one is a good financial provider, the ability to have the father identity verified is also closely tied to one's desirability on the job market. This is not accounted for in the self-verification model.

Although all three theoretical models frequently use marital couples to test their theories, all three fail to explicitly incorporate gender and power in their discussions of development of trust and commitment. However, it is possible to anticipate the role of gender and power in each of the models. Incorporating the role of gender and power is of particular importance in Tanzania. In Tanzania there are considerable gender differences in power and access to resources, and these differences are likely to influence the development of trust and commitment in addition to influencing sexual decision-making.

In all models, if one partner has less dependency on the other partner then that individual has greater power in the relationship (Emerson 1962; Molm and Cook 1995). Power within intimate relationships has been divided into structural power and

relationship power (Huston 1983; Cast 2003). Structural power, such as being male or having a high level of education, refers to the power an individual possesses from having valued resources from their position within the larger social structure. Relationship power stems from feelings about one's partner and feelings about the relationship and refers to the relative investment each partner has made to the relationship. The partner with stronger positive feelings for their partner or the relationship has less attractive alternatives to the relationship and thus less relationship power. Power differentials between partners may influence interactions between partners through different mechanisms in each theoretical perspective considered in this research.

Equity refers to the individual's perception of their contributions and rewards compared with those of their partner. If an individual is receiving more rewards and contributing less than their partner, the individual is considered to be overbenefiting while their partner has underbenefiting. However, it may be legitimate for men to overbenefit from their relationships with their wives in a strongly patriarchal society. If this is the case then the relationship between the variables in equity theory may operate differently for men than for women in Tanzania. Men who overbenefit and women who underbenefit may not experience distress from their states of inequity. Conversely, women who overbenefit and men who underbenefit may experience greater levels of distress from their states of inequity in Tanzania than has been found in U.S.-based studies.

Further, in the equity framework, men's advantage in terms of their structural power influences their exchanges with women by altering the perceived value of the resources that they provide in the exchange (Thye 2000). The resources that men, who

are of higher status than women in Tanzania, possess will be perceived to be more valuable than the resources that women possess. Although exchanges involving individuals of the same sex would be perceived to be equitably benefiting from the relationship, in male-female exchanges with exactly the same exchange terms, the male would be perceived to be underbenefiting due to the additional value that his male status confers on the resources he brings.

According to investment theory, satisfaction and investments are positively related to commitment, while the comparison level of alternatives is negatively related to commitment. However, the fulfillment of ones needs, the alternatives to the relationship, and the investments individuals make in their relationship likely differ for men and women. Given men's greater access to resources, women may be more dependent on relationships with men to fulfill their needs than men are on relationships with women to fulfill their needs. For example, while a woman's access to a resource such as land is often dependent on her relationship with a man, a man's access to land is not dependent on his relationship with a woman. While men can fulfill their need for access to land while in a relationship with a woman or while single, women may not be able to fulfill their need for access to land unless they are in a relationship.

Operating in the investment theory framework and returning to the notion that the resources that men possess will be perceived to be more valuable than the resources women possess, men and women may have different levels of expectations for their partner to fulfillment their needs. Since men's resources are likely to be perceived as higher value, women may expect less from men than men expect from women. As the comparator determining an individual's satisfaction in investment theory is an



individual's expectations for themselves, women's expectations may be more easily met than men's.

Turning to the third theoretical framework—identity theory—Tanzanian women may be more likely to value and respect the opinions of their male partners than Tanzanian men are to value and respect the opinions of their female partners. Such a differential in the valuation and credibility of the other would lead to male partners being more important “significant others” to women than female partners would be to men (Rosenburg 1986). If this is the case, verification from one's partner may have a stronger effect for women than for men.

Individuals seek relationships that verify their identities. Men may have a greater ability to select relationships that allow for self-verification than women, due to the greater variety of relationships that men are allowed. Further, as marriage is an important status marker for women and it is often more difficult for women in Tanzania to obtain a divorce than it is for men, women may be forced to enter or remain in relationships with partners who do not verify their identities. In the short-term, this implies that women are likely to experience less positive self-emotions and more negative self-emotions. Over time, this may result in slow changes in the meaning that women attach to their identities so that the meanings more closely resemble those that their male partners hold for them.

Men's ability to engage women other than their main partner to verify their masculine identities is evident in Silberschmidt's (2001) interviews with men and women in Dar es Salaam. Economic changes in Tanzania have made it more difficult for men to fulfill their social role of providing for the material needs of their families. Not being able to meet the identity standard of providing for their families leads to a lack of self-

verification and self-esteem problems for many poor men. Men's economic disempowerment has caused feelings of helplessness, inadequacy, and low self-esteem (Silberschmidt 2001). In Silberschmidt's (2001) interviews, extramarital relationships are often cited as a source of relaxation and comfort to men who feel a decreased self-esteem due to their economic hardships.

Gender is likely to influence the level of effort that the individual and their partner expect of the individual for various activities. However, if an individual's spouse is of higher status than the individual, then the individual's self-views and the individual's view of the spouse are influenced by the spouse (Cast, Stets, and Burke 1999). Higher status individuals appear to be able to resist the influence of lower status partners on their self-views. Given this ability of higher status individuals to influence their partners, higher status individuals may attain greater self-verification (Cast et al. 1999). Although there has been no evidence of gender differences in the influence of one spouse in the other spouse's self-views in the U.S., the degree of gender inequality in Tanzania may result in gender differences in an individual's ability to influence the other's self-views and in turn, self-verification.

Despite each theory's weaknesses, using the complementary theoretical perspectives of social exchange and identity theory allows the conceptualization of relationships as involving conflict, negotiation, and altruism while the relationship evolves and individuals seek out self-verification and the resources necessary for verification. The additional insight these perspectives provide, in terms of understanding the development of trust and commitment as well as the consequences of trust and

commitment once established—in terms of fidelity and condom use—are explored in this analysis.

## *Literature review of condom use and fidelity*

### *Condom use*

Condoms reduce the probability of HIV transmission in a single sex act by approximately 95% (Pinkerton and Abramson 1997). Estimates from Malawi suggest an impressive role for condom use in reducing a woman's lifetime risk of HIV (Bracher, Santow, and Watkins 2004). Simulations based on parameters found in southern Malawi (with an estimated HIV prevalence rate of 15 percent) suggest that a woman's lifetime risk of HIV is 42 percent with no condom use, a woman's lifetime risk of HIV is 27 percent when men consistently use condoms with bargirls, and a woman's lifetime risk of HIV is 9 percent when men use condoms with all non-marital partners (Bracher et al. 2004). Consistent condom use—that is use with every partner from start to finish—is necessary for AIDS prevention (Ahmed et al. 2001; Bracher et al. 2004). At the population level, condoms are more protective when a small group consistently uses condoms than when a large group uses them inconsistently (Bracher et al. 2004).

Although there has been a rapid increase in HIV infection as well as advances in access to HIV treatment over the past decade, there has been an insufficient increase in condom promotion for HIV prevention (Shelton and Johnston 2001; Foss, Watts, Vickerman, and Heise 2004). While the structural barriers to condom use include insufficient supply, access, or affordability of condoms (Foss et al. 2004) other barriers to condom use, such as an individual's perceptions of condoms and their relationship with their partner remain important.

Despite the role of consistent condom use in preventing both HIV infection and pregnancy, fewer than half of Tanzanian youth who have never been married, yet were

sexually active in the previous twelve months reported that they used a condom in their last sex (Tanzania Commission for AIDS (TACAIDS) et al. 2005). Condom use was greater among the older, the more educated, and the wealthier youth (TACAIDS et al 2005). Condom use during the last sex act was substantially higher among residents of urban areas than residents of rural areas. Condoms are less likely to be used with spouses than with partners to whom an individual is not married (Kapiga 1996). The difference in condom use by marital status likely reflects that married individuals are less likely to be concerned with preventing pregnancy and are less likely to feel that sex with their spouse puts them at risk for HIV. However, 12 percent of cohabiting or married couples in urban areas of Tanzania are discordant (TACAIDS et al 2005). Nonetheless, there is evidence from Malawi that while respondents report not using condoms with their spouses, they often report using condoms with extramarital partnerships to avoid bringing HIV into their marriage (Bracher et al. 2004).

Studies in the region suggest that condom use is influenced by an individual's beliefs about condoms and their beliefs about themselves. Negative beliefs about condoms include that they reduce pleasure, are only necessary with risky partners, indicate a lack of trust in a partner, indicate the user is promiscuous, interfere with the important exchange of fluids between partners, and have holes that allow HIV to pass through or are laced with HIV (see for example: MacPhail and Campbell 2001; Plummer et al. 2004; Watkins 2004; Bracher et al. 2004; Thomsen, Stalker, and Toroitich-Ruto 2004; Longfield, Glick, Waithaka, and Berman 2004; Haram 2005a). In addition to beliefs about condoms, a variety of personal attributes may influence whether an individual decides to use a condom. One may not use a condom if one trusts the partner,

is too shy to purchase condoms, has low condom use self-efficacy, has little knowledge of condoms, perceives weak social support for use, or feels unable to negotiate condom use with their partner (see for example: Abdool Karim, Abdool Karim, Preston-Whyte, and Sankar 1992; Bond and Dover 1997; Adih and Alexander 1999; MacPhail and Campbell 2001; Meekers and Klein 2002; Luke 2003; Ao, Sam, Manongi, Seage, and Kapiga 2003; Plummer et al. 2004; Bracher et al. 2004; Longfield et al. 2004; Klein and Coombes 2005; Meekers, Silva, and Klein 2005; Sunmola 2005).

As condom use is often negotiated by partners, the influence of an individual's partner is important in condom use. Women in rural Mwanza, Tanzania appear unwilling to insist on condom use with partners who refuse (Plummer et al. 2006). Students in Tanzania who believed that their partners do not like condoms were less likely to use condoms consistently (Maswanya et al. 1999).

Among men and women in Tanzania, those who reported more than one partner in the past four weeks were over three times more likely to report having used condoms in the past four weeks (Kapiga 1996). There were no differences in condom use by HIV/AIDS knowledge for women in Tanzania. However, for men, those with greater knowledge were more likely to have used condoms in the last four weeks than those with poor knowledge (Kapiga 1996). There is evidence that once an individual adopts condom use they are likely to continue with protective behavior. Retrospective event-history data from Tanzania covering 1993 to 1996 show that once men adopt condom use they are likely to continue use (Eloundou-Enyegue, Meekers, and Calvès 2005).

An individual's understanding of their risk for HIV infection—due to their sexual behavior or the behavior of their partners—has an important but complicated relationship

with condom use. A study in rural Ghana found that young men who felt that they were at greater risk for HIV were more likely to have used a condom in their last sexual intercourse (Adih and Alexander 1999). However, an individual's risk perception may neither be accurate nor increase with the local HIV prevalence rate. A study of adults aged 15 to 44 in rural Tanzania found that although HIV prevalence increased from 5.9 percent to 8.1 percent from 1994 to 2000, most individuals did not feel that they were at risk for HIV infection and there was only a modest increase in condom use (Mwaluko 2003).

The ability to use condoms depends on an individual's ability to obtain condoms when they are needed. In 1999 approximately 724 million condoms were available in sub-Saharan Africa (Shelton and Johnston 2001). This level of condom availability allowed less than five condoms for each man aged 15 to 59 in the region (Shelton and Johnston 2001). The low average level of condom availability is often called the "condom gap" because it remains insufficient to halt the spread of the virus on the continent. In Tanzania, youth's knowledge of where to obtain condoms remains low, with only 52.2 percent of young women and 72.2 percent of young men reporting that they know a source for condoms (Tanzania Commission for AIDS (TACAIDS) et al. 2005). An additional obstacle to obtaining condoms when they are needed is that youth fear providers may not maintain their confidentiality (Plummer et al. 2006).

To summarize, although condoms are effective at reducing the transmission of HIV, levels of consistent condom use remain insufficient to halt the spread of the HIV epidemic. Barriers to condom use include a lack of condom availability, individuals' perceptions of condoms, and individuals' beliefs about themselves, their partners, and

their relationships with their partners. As the AIDS epidemic progresses without a vaccine or cure, understanding the role of individuals' perceptions of their relationships—especially the trust and commitment they feel in these relationships—remains crucial to understand how individuals decide whether or not to use condoms.

### *Fidelity*

The sexual behavior of adults is often organized by a system of marriage or unions. In Tanzania, legal unions between men and women may be monogamous or polygamous, although the main form of marriage is monogamous. The proportion of women in polygamous marriages has decreased from 29 percent in 1996 to 23.8 percent in 2003-04 (ORC Macro 2006). In some regions of Tanzania over 30 percent of women were in polygamous marriages in 2003-2004 (ORC Macro 2006). However, even in formally monogamous marriages a husband may have an outside wife (Silberschmidt 2001).

Regardless of the seemingly homogenous categorization of a marriage as polygamous, the sexual behavior of polygamous individuals is not uniformly organized. For example, among the Dagtoga of northern Tanzania, sexual relations are permitted between in-laws and fictive kin of the same generation (Blystad 2004). While this sexual system may seem permissive, breaking the sexual norms can result in serious consequences such as fines, a temporary exclusion from social activities, and is believed to result in a “spiritual punishment” such as illness, infertility, or death (Blystad 2004).

Sexual behavior in Tanzania is largely organized to ensure procreation. The transition to parenthood marks an important step in the transition to adulthood (Blystad 2004; National Research Council and Institute of Medicine 2005; Hollos and Larsen



2008). Hollos and Larsen (2008) found that in Moshi, Tanzania, infertility is an acceptable reason, and even a reason to be encouraged, to seek an extramarital partner. Remaining faithful to a spouse suspected of being infertile is counter to the organization of sexual behavior to ensure procreation. Further, among many Tanzanians a postpartum abstinence of up to two years is followed to ensure that parents' sexual activity does not contaminate the mother's breast milk and harm the child (Silberschmidt 2001; Mabilia 2005). During this time, a woman is often aware that her husband has other sexual partners, yet will likely keep silent about his behavior (Silberschmidt 2001).

In sub-Saharan Africa, where the main mechanism of HIV transmission is sexual intercourse, changing sexual behavior remains central to stopping the spread of the epidemic (Shelton et al. 2004). While fidelity implies monogamy, AIDS prevention interventions often group partner reduction, reductions in casual sex, and various elements of partner selection under the rubric of "be faithful" (Shelton et al. 2004). The rate of partner change and concurrency of partnerships are the main determinants in the spread of HIV (Morris and Kretzschmar 1995; Morris and Kretzschmar 1997; Korenromp, Van Vliet, Bakker, de Vlas, and Habbema 2000; Bakker, Korenromp, van Vliet, and Habbema 2000; Plicher et al. 2004; Shelton et al. 2004).

Simulations suggest that although monogamy and partner reduction often fall under the programmatic umbrella of fidelity, increasing monogamy and reducing the average number of partners in a population each reduce the spread of HIV through different mechanisms depending on the behavioral characteristics of the population. For example, lowering the rate of partner change has a greater protective effect in populations with concurrent relations than in monogamous populations (Korenromp et al. 2000).

Research suggests that concurrent sexual partnerships contribute more to the spread of HIV than serial monogamy (Morris and Kretzschmar 2000). Further, serial monogamy—when individuals have many partners over time, yet only one partner at a time—may be as effective as partner reduction (Morris and Kretzschmar 2000). Finally, even relatively small reductions in annual number of partners—in simulations from 1.7 to 1.3 partners per year—can have dramatic effects on the HIV prevalence rate at the population level (Korenromp et al. 2000).

A reduction in partners has two effects on HIV transmission (Korenromp et al. 2000). First, an individual and each of their partners have fewer partners who are less likely to be infected. Second, an individual and each of their partners have a lower rates of sexually transmitted infections (STI) that facilitate infection (Korenromp et al. 2000). The effect of partner reduction on the HIV prevalence rate is strongest in populations where many people maintain concurrent sexual relationships. Additionally, when an individual maintains concurrent partnerships it increases the likelihood they will come into contact with a partner who has recently become infected and thus has a higher viral load (Morris and Kretzschmar 1995; Shelton et al. 2004).

Although there are often questions as to how acceptable fidelity is in a given society or culture as a means of HIV prevention, when individuals are asked what they were doing to avoid AIDS, the most common change that individuals report, as measured by Demographic and Health Surveys, is limiting their sexual activity to one partner (Shelton et al. 2004). In Uganda and Thailand, two countries often held as models of HIV prevention, it appears that norms of sexual behavior changed and avoiding multiple partnerships has become the norm (Shelton et al. 2004).

In Tanzania, data from the 1999 DHS and the 2003-04 THIS show that in recent years there has been a decrease in respondents reporting they had multiple partners in the past year (Tanzania Commission for AIDS (TACAIDS) et al. 2005). Among sexually active women aged 15 to 49, the percent who reported having had two or more partners in the past twelve months decreased from 10 percent in 1999 to 6 percent in 2003-04. Among sexually active men, the percent decreased from 32 percent in 1999 to 27 percent in 2003-04. This suggests that the promotion of fidelity as a means of AIDS prevention is acceptable in Tanzania.

Based on the 1991-1992 Tanzania DHS, marital status is a significant predictor of having had more than one sexual partner in the past four weeks for both men and women (Kapiga 1996). Compared with those in a monogamous first marriage, those who are in a monogamous marriage that is not their first, those who are in a polygamous marriage, and those who have never been married were more likely to report having more than one partner in the past four weeks (Kapiga 1996). Men and women who had an earlier age at first sex were more likely to report having had more than one sexual partner in the past four weeks (Kapiga 1996). There were no differences by rural or urban residence (Kapiga 1996). Men who had greater knowledge of HIV/AIDS were less likely to report more than one partner in the past four weeks than those with less knowledge of HIV/AIDS (Kapiga 1996).

Despite the feasibility of promoting fidelity, in sub-Saharan Africa there are many negative perceptions of fidelity. Fidelity as a means to prevent HIV may, in a manner similar to family planning, be seen as contrary to the local models of sexual behavior and may experience resistance (Watkins 2000). Lengthy periods of postpartum abstinence are

often cited as a justification for extramarital relations in Malawi (Watkins 2004). Additionally, having multiple partners can be seen as a symbol of masculinity (Silberschmidt 2001; Watkins 2004). Both men and women justify extramarital affairs when they are not satisfied with their spouses or when conceiving has become difficult (Silberschmidt 2001; Watkins 2004; Hollos and Larsen 2008).

Maintaining multiple partnerships is often identified as a means for poor women to achieve some level of financial security (Watkins 2004; Hattori and Dodoo 2007). Transactional sex—engaging in sexual relations in exchange for money, food, or favors to meet their needs—may be a survival strategy for some poor women (Zulu, Dodoo, and Chika-Ezeh 2002; Dodoo, Sloan, and Zulu 2003; Longfield et al. 2004). Hattori and Dodoo found that among women residing in Nairobi’s slums, those with co-wives were more likely to report multiple partners in the past year (Hattori and Dodoo 2007). Women in polygamous unions may have to share their husbands’ incomes with co-wives and may experience a greater need to exploit sexual networks (Hattori and Dodoo 2007). Further, within context of the Nairobi slums, relative economic hardship remained an important predictor: women with greater economic hardships were more likely to report multiple partnerships (Hattori and Dodoo 2007). This is consistent with men’s fears in Dar es Salaam that if they can no longer support their family, their wives might begin relationships with other men who can provide them support (Silberschmidt 2001).

Despite a tradition of polygamy in sub-Saharan Africa, the merits of monogamy are preached by Christianity and Islam and frequently the ideal for sexual behavior is restrictive (Watkins 2004). Among many groups, fear of HIV appears to add an important motivation to remaining faithful to one partner (Lary, Maman, Katebalila, McCauley, and

Mbwambo 2004). Further, infidelity may lead to violence in relationships. Youth in Dar es Salaam report that infidelity is the most common reason for violence in a relationship (Lary et al. 2004). If a man suspects that his partner has been unfaithful or if she has accused him of infidelity, a man may become violent (Lary et al. 2004). Among Tanzanian men who approve of violence in relationships, a partner's infidelity justifies a violent reaction (Lary et al. 2004).

Regardless of where individuals fall on the continuum of beliefs about fidelity, maintaining discretion and secrecy about sexual relations is one of youth's central concerns. In an environment where discession and secrecy surround relationships, youth often hide their relationships not only from elders, but also from each other. Youth report that it is difficult to trust their partners' reports of fidelity because partners may lie (Lary et al. 2004). Lying about one's sexual partners may be a result of contradictions between idealized sexual behavior and youth's actual behavior (Haram 2005b). For example, although the idealized sexual behavior is restrictive among the Meru of Northern Tanzania, the actual sexual behavior is more regulated by an individual's ability to be discrete than an individual's ability to be restrained (Haram 2005b). The Meru recognize that finding out about a partner's infidelity is painful and respect for one's partner dictates that one not confess infidelity in order to spare the partner pain (Haram 2005b). In this context, a lack of discretion in one's sexual affairs can be considered shameless (Haram 2005b).

Although all youth face contradictions between idealized and actual sexual behavior, the sexual behavior of Tanzanian women is often more carefully regulated than that of Tanzanian men (Haram 2005b). However, this does not suggest that women are

neglected the right to be satisfied by their partner (Silberschmidt 2001). Muslim women in Dar es Salaam reported that if a husband did not satisfy his wife, than the wife had the right to complain to his family (Silberschmidt 2001). However, Tanzanian women's right to be satisfied does not guarantee the right to seek multiple partners as it often does Tanzanian men.

Many men argue that although women should not have multiple partners, men need a variety of partners (Haram 2005b). The tradition of polygamy appears to reinforce the notion that men need multiple partners (Silberschmidt 2001). Extramarital relationships are often cited as a source of relaxation and comfort to men who feel decreased self-esteem due to their economic hardships (Silberschmidt 2001). Economic changes in Tanzania create challenges for men to fulfill their social role of providing for their family's material needs (Silberschmidt 2001). Therefore, women in Dar es Salaam are increasingly earning wages and questioning men's dominant position within the family (Silberschmidt 2001). The financial disempowerment of men and women's questioning of their dominant position within the family has lead to lower self-esteem for many men (Silberschmidt 2001). While an economic downturn may make it difficult for men to successfully enact masculinity in terms of financially providing for the family and being the head of household, they remain able to enact masculinity in terms of maintaining multiple partners (Silberschmidt 2001).

Individual and cultural understandings of fidelity are complex in societies such as Tanzania where marriages may be monogamous or polygamous. Although formal polygamy is becoming less common in Tanzania, the existence of polygamy appears to reinforce the notion that multiple partners are necessary, especially for men. While sexual

systems have evolved over centuries in response to local conditions and cultures, a sexual system that values the exchange of fluids between partners, necessitates postpartum abstinence during breastfeeding, and has a structure of accepted multiple sexual partnerships may confer upon its citizens a heightened risk of HIV infection in a generalized HIV epidemic. Further, the threat of HIV infection appears to be an important motivation to remaining faithful to one partner despite the many negative perceptions of having only one partner and the support system that sexual networks provide for poor women and their families. Given the history of polygamous marriage and the changing context of sexual relations due to the HIV/AIDS epidemic, the study of fidelity and the local understandings of fidelity are particularly germane in the Tanzanian context.

## CHAPTER 3: EXPECTED RELATIONSHIPS AMONG THE VARIABLES

### *Models of trust and commitment in relationships*

The theoretical perspectives on trust and commitment discussed above suggest a number of hypotheses. Respondents in the household survey will likely differ on many elements of their relationships.<sup>1</sup> First, in the terms of social exchange theory, some respondents will perceive high levels of rewards and others will perceive low levels of rewards from their relationships. Similarly, some respondents will have high levels of costs and others will have low levels of costs. Equity theory posits that individuals' compare their costs and rewards to those of their partner and that this results in a perception of overbenefiting inequity or underbenefiting inequity. According to equity theory, respondents who feel higher levels of underbenefiting or overbenefiting inequity will feel higher levels of distress.

Underbenefiting or overbenefiting inequity in a relationship is predicted to have an indirect relationship with commitment and relationship satisfaction. According to equity theory, the relationship between underbenefiting or overbenefiting inequity and commitment and relationship satisfaction works through an individual's feelings of distress. Higher levels of distress should lead to less commitment and satisfaction in relationships.

As discussed above, investment theory differs from equity theory in terms of the tool of comparison. In investment theory, the basis of comparison is what one expects for one's self. If an individual's expectations are met, individuals will find their partner's contributions rewarding and have favorable opinions about those rewards and

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<sup>1</sup> In the case where a respondent reports more than one partner, all partner specific measures refer to the partner that the respondent identifies as their main partner.



contributions. According to investment theory, individuals who have favorable opinions about the rewards and contributions that their partner has to offer them and their relationship will have higher levels of relationship satisfaction, whereas those with unfavorable opinions about the rewards and contributions that their partner has to offer will have lower levels of relationship satisfaction.

Investment theory predicts that relationship satisfaction, investments in the relationship, and the comparison level of alternatives each influence the respondent's level of commitment to the relationship. Higher levels of relationship satisfaction lead to higher levels of commitment to the relationship. Greater investments—that which an individual gives to the relationship that cannot be recovered if the relationship ends—lead to higher levels of commitment. Comparison level of alternatives is the expectation of rewards that could be obtained in another exchange. More favorable comparison level of alternatives leads to lower levels of commitment to the relationship.

Respondents in the household survey will likely differ on many elements of the self-verification process, leading to differences in self-feelings, trust, and commitment. Individuals who have an identity verified by their partner will experience more positive self-feelings and less negative self-feelings than individuals who do not have an identity verified by their partner.

Burke and Stets' model predicts that self-verification and positive self-feelings lead to higher levels of trust in one's partner, while negative self-feelings lead to lower levels of trust in one's partner. Further, it is through the relationship that self-verification and self-feelings have with trust that self-verification brings about commitment to the relationship.

### *Models of condom use*

Individuals often make decisions about the type of partner with whom one must use condoms and the type of relationships where condoms are necessary. The main reason individuals report not using condoms with stable partners is that they trust their partner (Agha et al. 2002). As individuals become more committed to each other they are more likely to abandon condom use (Longfield et al. 2002). As discussed above, many people believe it is inappropriate to use condoms with a spouse. Past research supports this notion in that condoms are less likely to be used with spouses than with casual partners (Van Rossem, Meekers, and Akinyemi 2001).

An individual's beliefs about condoms influence the likelihood that the individual will use condoms. Individuals who believe that using condoms is acceptable or common are more likely to use condoms. Individuals who have positive beliefs about condoms—they are effective at preventing HIV infection, do not have holes, or are not harmful—are more likely to use condoms. Further, individuals who believe they have the skills required to use a condom—that is that they can buy condoms, ask their partner to use them, and successfully use them—are more likely to use condoms than those who do not think that they have the skills required to use a condom.

As discussed above, an individual's understanding of their risk for HIV infection is an important predictor of condom use. Understanding one's risk for HIV infection relies on accurate knowledge of HIV transmission. Further, an individual's knowledge of their own behavior will influence their decision to use condoms.

### *Model of fidelity*

Respondents in the household survey will likely differ on many elements of both their relationships and their individual characteristics, in ways that will influence whether an individual is faithful to their partner. The structure or type of relationship an individual has with their partner will likely influence the individual's fidelity. Compared with married respondents, those who are not married were more likely to report having more than one partner in the past four weeks (Kapiga 1996).

Aside from the formal structure of the relationship between partners, the attributes of their relationship appear to influence whether an individual is faithful to their partner. Tanzanian men and women appear to justify extramarital affairs when they are not satisfied with their spouses (Silberschmidt 2001; Hollos and Larsen 2008).

Taking together the past research on the development of trust and commitment in intimate relationships, the finding that commitment evokes relationship maintenance behaviors in the face of attractive alternatives, and the finding that as individuals become more committed to each other they are likely to abandon condom use and assume mutual fidelity (Longfield et al. 2002), individuals who report higher levels of commitment to their partners will likely also report higher levels of fidelity to their partners.

Although there are many negative perceptions of having only one partner in sub-Saharan Africa, the threat of HIV infection appears to be an important motivation to remaining faithful to one partner. An individual's personal attributes may influence whether they endeavor to be faithful to a partner as well as their actual ability to be faithful to a partner. Knowledge of HIV and HIV risk perception appear to be important motivations to remaining faithful to one partner (Lary et al. 2004). Individuals who feel

there is nothing that they can do to avoid AIDS are likely to be less motivated to remain faithful to their partners in order to avoid HIV/AIDS. Further, individuals who believe that they have the ability to be faithful to a partner are more likely to attempt and execute fidelity.

## **CHAPTER 4: RESEARCH DESIGN AND METHODS**

Sexual behavior is a sensitive topic and often subject to underreporting. Plummer and colleagues' (2004) assessment of the validity of adolescent sexual behavior in rural Tanzania shows that while in-person interviews had similar aggregate levels of reporting sensitive behavior, there were often inconsistencies in an individual's own reporting of behavior. Plummer and colleagues suggest that the use of multiple research methods improves the reporting of sexual behavior. While this project did not expose the same individuals to multiple methods, we do use multiple methods to investigate the relationship between trust, commitment, fidelity, and condom use: in-depth interviews, survey interviews, and a second round of in-depth interviews.

### ***Semi-structured in-depth interviews***

The first round of in-depth interviews took place in the Mtoni ward of Dar es Salaam prior to the nationally representative household survey. In-depth interviews explored individuals' perceptions of their relationships, the reasons behind those perceptions, and the behaviors of each partner in the relationship. In-depth interviews allowed a richness of responses since individuals can reply in detail to questions and the responses are not coded into pre-existing categories. Mtoni was selected from a list of residential wards within Dar es Salaam due to the ethnic and economic diversity of the ward. Mtoni is located in the district of Temeke, the largest of the three districts in Dar es Salaam, south of the center of the city. According to the 2002 Population and Housing Census, approximately 48,000 people lived in Mtoni in 2002. After Mtoni was selected, we contacted a local community-based organization, Mass Development Association (Madea), which works with local youth in various arenas, including job training and HIV

prevention. Madea works intensively with youth in Mtoni and knew most of the local youth by name. Madea introduced us to local youth as well as the neighborhood level leader (the “cell leader”). We discussed the general goals of talking with youth about relationships with the cell leaders and asked permission to work in their neighborhood. Once we attained permission from the cell leader, Madea put us in contact with youth who fell into the various targeted categories of our purposive sample.

A total of 39 individuals participated in the first round of in-depth interviews. Of the participants initially recruited, only 11 consented to provide contact information for their partners (for a total of 23 individuals in relationships—one gave us contact information for two partners). Only those 23 individuals whose partners’ also participated in the first round of interviews were recruited for the second round of interviews. Of those 23 individuals, 18 participants were relocated and provided consent to be interviewed a second time (two did not want to talk because they had ended their relationships). A total of 9 additional individuals were recruited to participate in the second round of in-depth interviews bringing the total number of second round interviews to 27.

In-depth interviews are not intended to be representative of a population. We conducted a purposive sample of young couples of different ethnic groups, varying educational attainment, and different marital statuses. However, as sexual relationships between youth are secretive and hidden from those outside one’s peer group, finding youth willing to give us their partner’s contact information proved difficult. A few youth wanted to discuss participation with their partner prior to committing to participating in our study. Some youth consented to talk with us knowing we wanted to talk to their

partner, but once asked for their partner's contact information were unwilling to put us in contact with the partner telling us that their partner was away at school, only for us to discover later that their partner was not actually away. We did not pursue partners of youth if the youth did not give us their contact information.

After the first few weeks of the in-depth interviews, the youth in the area had heard from their friends about the researchers and what the researchers wanted to talk about with the youth. Additionally, they knew that we wanted to talk with their partners. Due to the social distance between the young people and adults, the youth knew we were talking about relationships, but adults frequently asked if we were conducting a study of malaria. Consequently, most youth were able to talk with us without fear that adults would think that they were in relationships while the youth we approached had frequently already heard about the research project before we approached them. This created greater selection into our in-depth interviews than would have happened without this diffusion of knowledge about our project, however, those youth we approached who were willing to participate in our project were also willing to provide their partner's contact information and were fairly certain that their partners were willing to talk with us. By the end of the first round of interviews, many of the interviewed youth would talk with us when we walked around Mtoni and the local youth leader would affectionately introduce us as "*Safi*" or "cool" and tell the youth that there was nothing to worry about in talking with us.

Male and female partners of both the married and unmarried participants were asked similar questions to get the male and female perspective on all relevant topics. With the permission of the participant, we audiotaped the in-depth interviews so that they

could be transcribed later for analysis. The in-depth interview guide included themes, each with four to five questions as suggestions or entrees into the theme. Because the in-depth interviews are conversational, the interviewer did not ask every potential question, but used the guide as a conversational aid. Further, there was no specific order for the in-depth interviews; the conversation was allowed to flow naturally with the interviewer simply ensuring that all themes had been addressed.

A number of techniques were used in the in-depth interviews to assess the development of and the relationship between trust, commitment, fidelity, and condom use. First, participants were asked to provide a history of their current relationship in order to gain insight to the local context of relationship development. Asking the participants for a relationship narrative facilitated the participant discussing their detailed knowledge of relationship progressions and difficulties. This knowledge could not have been obtained through the administration of a survey questionnaire.

After providing a narrative of the history of their relationship, participants were asked what trust and commitment meant to them. They were also probed about what they expect from their partners and what their partner should expect of them. The participants were also asked about what they perceived to be the causes of infidelity.

To explore the relationship between commitment and the availability of alternative partners, participants were asked about the availability of other partners. They were probed as to whether the marriage market is more difficult for men or for women, if other men/women have better “deals” than they do, and whether it is better to be single or in a relationship. Participants were asked what it means to be unfaithful to one’s partner and probed for gender differences in the reasons for and consequences of infidelity. They



were asked if a partner's infidelity affects one's commitment to an unfaithful partner or trust in an unfaithful partner.

The in-depth interviews yielded information on the subtle differences in the youth in Mtoni's understandings and consequences of trust, commitment, fidelity and condom use. Conducting in-depth interviews with young women and young men provided a rich data source. We have independent reports from the male and female perspective on the couple's relationship as well as on the development of trust and commitment between partners. This will allow us to explore any sex differences in the themes that emerge in these conversations.

After a preliminary analysis of the quantitative data, we recontacted the individuals interviewed in the first round of in-depth interviews and initiated a second round of in-depth interviews with those participants for whom we were able to interview both individuals in the relationship. We substituted individuals with similar background characteristics for those individuals who could not be recontacted for the second round of in-depth interviews or who were unwilling to provide their partner's contact information. This second round of in-depth interviews allowed us to explore the meanings that the residents of Mtoni, Dar es Salaam attached to the relationships and processes found in the survey data, as well as to capitalize on the rapport established during the initial in-depth interviews and to discuss how their relationships have progressed over the three to four months since we first interviewed the participant.

The transcriptions from the discussions were analyzed to explore the various opinions, themes, and patterns found in the interviews. The program Atlas.ti was used to organize the analysis of the in-depth interviews. Various themes and topics in the in-

depth interviews were coded with similar themes and topics in order to review how each of the participants discussed or explained the topic. The analysis presented in Chapter 5 is a description of the conversations after reviewing the participants' comments on each topic.

### ***In-person survey interviews***

#### *Sample selection*

The household survey was a random sample of men and women aged 15 to 24 residing in Tanzania. While the semi-structured in-depth interviews were of coupled individuals in relationships, the in-person survey interviews were of individuals and we are unable to link individuals to their partners. PSI used a three-stage sampling design. First, administrative regions were selected. By design, 70 percent of the wards were selected from rural areas and 30 percent of the wards were selected from urban areas. Second enumeration areas were selected in each selected ward or branch. In the final stage households were selected. Within each enumeration area, the interviewers were instructed to begin at the center of the village (by choosing a landmark) and to spin a bottle. The interviewer walked 200 steps (or 100 if the village was particularly small). After walking 200 steps the interviewer turned around to face the landmark. The interviewer took note of the date and used the date to determine the number of houses that they will count before selecting the first household. For example, if the date was the 25, the interviewer began by interviewing the 5<sup>th</sup> house from their location, headed back towards the landmark. If it was the 20<sup>th</sup> of the month, the interviewer interviewed the 10<sup>th</sup> house from their location (headed in the direction of the landmark). If a member of that household qualified for an interview (was aged 15 to 24), and was present, the interview

was conducted. In the case where more than one youth in a household was eligible for participation in the survey, the interviewer used the last birthday method to determine which youth in the household to interview. If the selected member of a household was not present at the time, the data collector noted the location of the household and made an appointment to return to the household. The data collector then walked three households farther and inquired as to whether that household had an eligible respondent. If the third household did not have an eligible respondent, the interviewer proceeded to the next closest household. After each interview, the interviewer was instructed to go three houses away and inquire if there is a youth aged 15 to 24 who usually resides there or slept there last night. Interviewers returned to the house up to three times in order to interview a selected respondent. If the interviewer reached the end of a road or path and has the option to turn left or right to select a new household, the interviewer always turned left. If the road or path ended with no option to turn onto a new path, the interviewer returned to the most recent intersection and turned left.

We had a targeted sample size of approximately 2000 respondents aged 15 to 24. A total of 2094 individuals were interviewed. Respondents were identified by a household interview, in which all individuals in the household aged 15 to 24 were eligible for participation in the study. Informed consent was obtained from the respondent. For respondents under age 18, informed consent was obtained from both the respondent and the household head.

This analysis is limited to the 816 young adults with current partners<sup>2</sup>. We restricted our analysis to this group because we are interested in the interaction currently

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<sup>2</sup> Specifically, those who report that they are currently in a relationship (“*Je, unaye mpenzi kwasasa?*”, Literally, “do you currently have a love?”) and that they have had sex in the past year.

taking place between partners. Additionally, partners who have terminated a relationship are likely to be biased in their response to questions about their past romantic involvement. Nonetheless, studying only those with a current partner will bias the results. Individuals who do not have partners are different than those with partners. Further, individuals who do not want to tell us about their partners are likely to report that they do not have partners. Individuals who do not want to tell us about their partners are likely different from those who are more willing to discuss their partnerships.

### *Questionnaire design*

PSI's standard questionnaire for survey interviews asks a range of questions about reproductive health topics such as HIV risk behaviors and condom use. The questionnaire also gathers background information on respondents including demographic and socioeconomic data. In addition to PSI's standard questions, the PSI/Tanzania 2007 TraC survey includes modules we added related to trust and commitment. These modules were introduced by explaining to the respondent that we would like to ask them about their sexual partners. Respondents were reminded that all of their answers are confidential. The respondents were told that we understand that they may have many partners and were asked to discuss the person that they felt was their main partner.

Each of the modules related to trust and commitment used measures adapted from past research conducted in developed countries. The translator from the first round of in-depth interviews, a native Swahili speaker, translated these modules from English into Swahili. The translator was instructed to prioritize translating the concepts of the question over translating the questions literally (for methods of translating survey questions see International Quality of Life Assessment (IQOLA) Project 2006). The translated modules

were pretested in Mtoni through cognitive interviews at the end of the in-depth interviews. Over the course of the cognitive interviews, these modules were refined to ensure the appropriateness and comprehension of each question as it relates to measuring the desired concept.

During the interviewer training for the survey, the interviewers were asked for their endorsement of the Swahili translation of the rest of the questionnaire. The interviewers were asked if they could suggest more accurate translations of the concepts, improved clarity of the questions, or more commonly used language. The translations were slightly modified as needed prior to the survey.

Consistent with past research on social exchange, we measured investments, equity, comparison level of alternatives, and relationship satisfaction. Equity was measured by asking participants to indicate if each of resource exchanges were fair or unfair.<sup>3</sup> Four of the six resource areas are based on Foa and Foa's (1974) classification of resources (love, status, money, and material goods). Based on the pretesting, we replaced Foa and Foa's categories of services and information with the more general term "help". The sixth resource, sexual satisfaction, was added by Sprecher in previous research on equity (2001).

The equity score is represented by the mean of the responses for the six resource areas. Lower scores on the equity scale represent underbenefiting inequity and higher scores represent overbenefiting. This measure of equity is curvilinear—the endpoints

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<sup>3</sup> Some people in relationships give their partners more or less of some things than they get from their partner. In your relationship are you giving more/ getting less, getting equal or giving less/ getting more than your partner in terms of \_\_\_\_\_. (Baadhi ya watu katika mahusiano wanawapa wapenzi wao zaidi au pungufu ya baadhi ya vitu wanavyopata kutoka kwa mpenzi wake. Katika uhusiano wako wewe unatoa zaidi/ unapata pungufu, sawasawa au unatoa pungufu/unapata zaidi ya mpenzi wako katika yafuatayo \_\_\_\_\_)

(scores of 1 and 3) represent less equity and the midpoint (scores of 2) represents greater equity. Consistent with past research (see Sprecher 1986; Sprecher 2001), we created two variables from our measure of equity. The underbenefiting inequity index was created by assigning respondents who have equity scores of 2 or greater a score of 0 on the underbenefiting inequity index. For the underbenefiting inequity index, respondents with scores less than 2 were assigned an underbenefiting inequity value that is the absolute difference between their equity score and the perfect equity score of 2. For example, a respondent with an equity score of 2.5 would have an underbenefiting inequity score of 0 while a respondent with an equity score of 1.5 would have an underbenefiting inequity score of 0.5. The overbenefiting index was created by assigning respondents who have equity scores of 2 or lower a score of 0 on the overbenefiting index. Respondents who had equity scores greater than 2 were assigned an overbenefiting score that was the difference between their equity score and the perfect equity score of 2. Returning to our example, a respondent with an equity score of 2.5 would have an overbenefiting score of 0.5 while a respondent with an equity score of 1.5 would have an overbenefiting score of 0. Respondents who reported that they did not know whether they were overbenefiting or underbenefiting on a resource were considered to neither perceive to be overbenefiting nor underbenefiting in that resource.

Consistent with Rusbult and colleagues' research (1998) on the role of investments in relationship commitment, investments were measured by asking respondents to what extent they agree or disagree with statements about their

relationship,<sup>4</sup> on a four-point scale ranging from “don’t agree at all” to “agree completely.”<sup>5</sup> Statements address the respondents’ perceptions that they have invested various resources in their relationship that they either would lose if the relationship ended or that they would find difficult to replace. The resources include time, memories, sense of identity, and social ties.

Comparison level of alternatives is measured by items capturing the individual’s perception of the quality and likelihood of alternative means of having various needs fulfilled and the quality and likelihood of alternative partners on a four-point scale (Rusbult et al. 1998).<sup>6</sup> The comparison level of alternatives score is represented by the

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<sup>4</sup> Questions used to assess investments include: I have dedicated a great deal of time to my relationship with my partner. (*Nimetumia muda mwingi katika uhusiano wangu na mpenzi wangu*); I have not told my partner many private things about myself. (*Sijamweleza mpenzi wangu mambo mengi ya binafsi ambayo yananihusu.*); When I think of who I am, I think of myself as someone who has a partner and is in a relationship. (*Ninapofikiria kuhusu mimi ni nani, ninajifikiria mwenyewe kama mtu mwenye mpenzi na niliye katika uhusiano*); My partner and I remember many things that we did together (*Mpenzi wangu pamoja na mimi tunakumbuka mambo mengi tuliyoifanya pamoja*); I have put a great deal into my relationship with my partner that I would lose if the relationship were to end (*Nimefanya mengi katika uhusiano wangu na mpenzi wangu kiasi kwamba ningepungukiwa iwapo uhusiano ungekuwa uishe*); Few areas of my life have become linked to my partner. (*Sehemu chache katika maisha yangu zimetokea kuhusiana na mpenzi wangu*); I have put a great deal into my relationship with my partner (*Nimefanya mengi katika uhusiano wangu na mpenzi wangu*); If my partner and I were to decide to break up, my relationships with *friends* would be complicated (*Iwapo mpenzi wangu pamoja na mimi tungeamua kuachana, basi uhusiano wangu na marafiki zangu ungekuwa mgumu*); If my partner and I were to decide to break up, my relationship with *family members* would be complicated. (*Iwapo mpenzi wangu pamoja na mimi tungeamua kuachana, basi uhusiano wangu na ndugu zangu ungekuwa mgumu*)

<sup>5</sup> A Monte Carlo analysis suggests that substituting the mean response of a respondent’s scores on other items on a scale is the optimal method for handling missing data (Roth, Switzer, and Switzer 1999). This approach saves data and takes advantage of existing data from the individual to estimate missing scores. Unless otherwise stated, missing values and “don’t know” values were imputed using this method.

<sup>6</sup> Questions assessing alternatives include: If you didn’t have your current partner, how difficult would it be for you to get the following needs fulfilled either by finding a new partner, or by your friends or family? (Kama usingekuwa na mpenzi wako wa sasa, ni kwa kiasi gani ingakuwa vigumu kwa mahitaji yafuatayo kutoshelezwa na mpenzi mpya au marafiki zako au familia yako?) A) My need for feeling close with someone (*mahitaji ya kujisikia kuwa karibu na mtu Fulani*); B) My need for having someone to be with & do activities with all the times you want (*mahitaji ya kupata mtu wa kuwa nae na kufanya naye shughuli wakati wote unapohitaji*); C) My need for feeling that there is someone who understands you (*mahitaji ya kujisikia kwamba yupo mtu anayekuelewa*); D) My need for feeling like you’re in a serious relationship (*mahitaji ya kujisikia kwamba upo katika uhusiano makini*); E) My need for feeling emotionally close to someone (*mahitaji ya kujisikia kwamba upo karibu na mtu fulani kihisia*); F) My need for sex (*mahitaji ya kufanya mapenzi*); Other than my partner, the people in this area would not be appealing partners. (*Tofauti na mpenzi wangu, watu katika eneo hili wasingeweza kuwa wapenzi wa kuvutia sana.*); Being with a different partner or spending time with friends or alone would be enjoyable. (*Kuwa katika uhusiano na*

mean of the responses for the items, with higher scores representing better and more likely alternatives.

Relationship satisfaction is measured by the ten statements used by Rusbult and colleagues (1998; Sprecher 2001). The scale includes statements about how well the respondent's partner fulfills the respondent's needs for intimacy, companionship, security, and emotional involvement as well as general statements about the respondent's satisfaction with their partner.<sup>7</sup> An individual's relationship satisfaction score is the mean of the responses to the ten items in the scale.

Based on Burk and Stets' work and recommendations (1999), self-verification was measured by asking respondents the extent that they feel they should engage in a partner role activity (on a scale of 0-5)<sup>8</sup> and the degree that they think their partner thinks

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*mpenzi tofauti au kutumia muda wangu na marafiki au kukaa mwenyewe kutanipatia faraja*); If I weren't in a relationship with my partner, and I wanted to I would find another appealing person to be my partner. (*Kama nisingekuwa katika uhusiano na mpenzi wangu, ningetafuta mtu mwingine wa kuvutia awe mpenzi wangu kama ningetaka*); It would be difficult to get the intimacy, companionship, and help that I get out of my current relationship if I were in different relationship (*Ingekuwa vigumu kupata ukaribu, kampani, na msaada ninaopata katika uhusiano wangu uliopo kama ninge kuwa katika uhusiano tofauti*).

<sup>7</sup> Questions measuring satisfaction include: In life, people have many needs, like needing someone to be close to, needing someone to be with and do things with, needing to feel someone understands you, needing to feel like you are in a serious relationship, needing to feel emotionally close to someone, and needing sex. How much does your relationship with your partner fulfill your need (*Katika maisha, watu wana mahitaji mengi, kama kuhitaji mtu wa kuwa naye karibu, kuhitaji mtu wa kuwa naye na kushirikiana naye mambo, kuhitaji kujisikia mtu anakuelewa, kuhitaji kujisikia kama uko katika uhusiano imara/ makini, kuhitaji kujisikia karibu na mtu kihisia na kuhitaji kufanya mapenzi. Ni kwa kipimo gani uhusiano wako na mpenzi wako unatosheleza mahitaji yako...*): a) for feeling close with someone (*ya kujisikia kuwa karibu na mtu fulani*), b) for having someone to be with & do activities with all the times you want (*ya kupata mtu wa kuwa nae na kufanya naye shughuli wakati wote unapohitaji*), c) for feeling that there is someone who understands you (*ya kujisikia kwamba yupo mtu anayekuelewa*), d) for feeling like you're in a serious relationship (*ya kujisikia kwamba upo katika uhusiano makini*), e) for feeling emotionally close to someone (*ya kujisikia kwamba upo karibu na mtu fulani kihisia*), f) for sex (*kufanya mapenzi*); I feel satisfied with my relationship with my partner. What about you, do you agree or disagree? (*Ninajisikia kutosheka na uhusiano wangu na mpenzi wangu. Vipi kuhusu wewe, unakubaliana au hukubaliani?*); I feel my relationship with my partner is not ideal. What about you, do you agree or disagree? (*Ninajisikia uhusiano wangu na mpenzi wangu haupo kama nilivyotegemea. Vipi kuhusu wewe, unakubaliana au hukubaliani?*); I feel my relationship with my partner makes me happy. What about you, do you agree or disagree? (*Ninajisikia uhusiano wangu na mpenzi wangu unanifanya mwenye furaha. Vipi kuhusu wewe, unakubaliana au hukubaliani?*)

<sup>8</sup> To what degree do you think you are responsible for the following activities for you and your partner. Would you say you are responsible not at all, a little, a fair amount, a lot, or entirely (*Ni kwa kiasi gani*



they should engage in the activity (on a scale of 0-5). High agreement between an individual's own feeling and the individual's perception of their partner's feeling is considered verification of the identity. High disagreement is failed self-verification. The activities listed were informed by in-depth interviews and included activities such as giving advise, making sure the couple has sex, financially supporting each other, giving affection, and helping with the partner's problems (Cast and Burke 2002). Although Burke and Stets (1999) measured self-verification largely based on instrumental activities, they suggested future research include emotional activities such as providing emotional support. Our questionnaire included emotional items adapted from the Areas of Change Questionnaire (Weiss, Hops, and Patterson 1973; Mead, Vatcher, Wyne, and Roberts 1990; Douglass and Douglass 1995; Child Trends 2003) in addition to the items used by Burke and Stets (1999; Stets and Burke 2005).<sup>9</sup>

The difference in an individual's own feeling and the individual's perception of their partner's feeling were calculated for each item. We calculated each respondent's average difference across the activities and then reverse code the final self-verification index such that scores range from 0, indicating no verification or agreement, to 5, indicating perfect verification and agreement.

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*unajisikia kuwajibika katika shughuli zifuatazo kwako na mpenzi wako. Ungesema hauwajibiki kabisa, kidogo, ya kuridhisha, sana, au kabisa)*

<sup>9</sup> Activities included: A) For taking care of the house (*Katika kutunza nyumba*); B) For preparing and serving meals (*Katika kuandaa na kutayarisha chakula*); C) For washing, ironing, and mending clothes (*Katika kufua, kunyoosha na kupanga nguo*); D) For giving advice (*Katika kupeana ushauri*); E) For maintaining relationships with each other's parents or other members of the family (*Katika kudumisha uhusiano baina ya wazazi wa pande zote mbili au wanafamilia wengine*); F) For making sure you have sex with your partner (*Katika kuhakikisha kuwa kufanya mapenzi na mpenzi wako*); G) For financially supporting us (*Katika kusaidiana kipesa*); H) For showing appreciation for the things partner does well (*Katika kuonyesha kufurahishwa kwa yale mpenzi wako anayofanya vizuri*); I) For giving partner affection (*Katika kuonyesha mvuto wa kumpenda mpenzi wako*); J) For helping with the partner's problems (*Katika kusaidia matatizo ya mpenzi wako*) K) For looking out for each other/anticipate needs (*Katika kutegemeana mtakapohitajiana*); For spending time relaxing with partner (*Katika kutumia muda wako kujipumzisha na mpenzi wako*).

Self-esteem was measured using the ten-item Rosenberg self-esteem scale

(Rosenberg 1989).<sup>10</sup> Mastery was measured using Pearlin's seven-item mastery scale

(Pearlin and Schooler 1978).<sup>11</sup> Depression was measured using the 10 items from the

Center for Epidemiological Studies Short Depression Scale (CES-D 10) (Radloff 1977).<sup>12</sup>

Distress was measured using the Life Distress Inventory (Corcoran and Fischer 2000).<sup>13</sup>

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<sup>10</sup> I feel that I'm a person of worth, at least on an equal plane with others (*Ninajisikia kuwa mtu mwenye thamani, nikilinganishsa na watu wengine.*); I feel that I have a number of good qualities. (*Ninajisikia kuwa na baadhi ya sifa nzuri.*); All in all, I am inclined to feel that I am a failure. (*Kwa ujumla, ninakaribia kujisikia kutofanikiwa.*) I am able to do things as well as most other people (*Nina uwezo wa kufanya vitu sawasawa na watu wengine wengi.*); I feel I do not have much to be proud of. (*Ninajisikia sina vingi vya kujivunia.*); I think positively about myself (*Nina mawazo mazuri kuhusiana na mimi mwenyewe*); On the whole, I am satisfied with myself (*Kwa ujumla, nimeridhika na mimi mwenyewe*); I wish I could have more respect for myself. (*Ninatamani ningeweza kujiheshimu mwenyewe zaidi.*); Sometimes I feel like I am useless (*Wakati mwingine najisikia kama sina faida*) At times I think I have done things that are not of good moral character (*Wakati mwingine ninajisikia kufanya mambo ambayo sio ya tabia nzuri.*)

<sup>11</sup> I have little control over the things that happen to me. (*Nina uwezo mdogo wa kukabiliana na vitu vinavyonitokea*); There is really no way I can solve some of the problems I have (*Hakuna njia yoyote mimi ninaweza kutatua baadhi ya matatizo niliyonayo*); I often feel helpless in dealing with the problems of life (*Mara nyigi najisikia kutoweza kutatua matatizo ya maisha.*); Sometimes I feel that I'm being pushed around in life (*Wakati mwingine najisikia kusukumwa kimaisha*); I can do just about anything I really set my mind to do (*Nina uwezo wa kufanya karibu jambo lolote ambalo nimekusudia kufanya*); There is little I can do to change many of the important things in my life (*Ni kwa kiasi kidogo ninaweza kubadili mambo mengi muhimu katika maisha yangu.*); What happens to me in the future mostly is caused by myself (*Yale yatayonitokea katika muda ujao kwa kiasi kikubwa yanasababishwa na mimi.*).

<sup>12</sup> You were bothered by things that usually don't bother you (*Ulisumbuliwa na mambo ambayo si kawaida kukusumbua*); You had difficulties keeping your mind on the activities you were doing (*Ulipata ugumu kuweka mawazo yako katika shughuli unazofanya.*); You felt depressed. (*Ulijisikia kukata tama*); You felt that everything you did was an effort. (*Ulijisikia kwamba kila ulilofanya ni juhudi.*); You felt hopeful about the future. (*Ulijisikia kujaa matumaini katika siku za mbeleni*); You felt fearful. (*Ulikuwa na woga*); Your sleep was restless. (*Usingizi wako ulikuwa wa mang'amung'amu*); You felt happy. (*Ulijisikia na furaha*); You felt lonely. (*Ulijisikia mpweke*); You could not motivate yourself (*Hukuweza kujihamasisha mwenyewe*).

<sup>13</sup> Burke and Stets measure distress using the anxiety subscale of the SCL-90 (Derogatis, Covi, Lipman, Davis, and Rickels 1971). There is a fee for using this scale, which makes it relatively prohibitive for AIDS prevention programs to use repeatedly in their surveys. Distress was measured using the following: Now I'd like to talk about areas of your life and how you feel about these parts of your life. Sometimes people feel worried, sad, tense/restless, or irritable about things. How worried, sad, tense/restless, or irritable do you feel about each area that I mention. Please think about how you currently feel about each area of your life. (Sasa ningependa tuongee kuhusu maisha yako na jinsi ujisikiavyo kuhusiana na sehemu zifuatazo za maisha yako. Mara nyingine watu hujisikia kero, misukosuko, woga ama huzuni katika mambo fulani. Kwa wewe, ni kwa vipi umejisikia kero, misukosuko, woga ama huzuni katika sehemu zifuatazo ambazo nitakutajia. Tafadhali fikiria kuhusu jinsi unavyojisikia kwa sasa katika kila sehemu ya maisha yako.) Sex (*kufanya mapenzi*); Relationship to partner (*mahusiano na mpenzi wako*); Relationship to relatives (*mahusiano na ndugu*); Household management (*utunzaji wa nyumba*); Finances (*Fedha*); Work (*kazi*); Education (*elimu*); Recreation/leisure (*viburudisho/ mapumziko*); Social life (*maisha ya kijamii*); Religion (*dini*); Personal independence (*uhuru binafsi*); Satisfaction with life (*kuridhika na maisha*); Expectations for future (*matarajio ya baadae*).

The Life Distress Inventory asked respondents to assess how distressed they felt at the time about a variety of areas of their lives, including marriage, relationship to their spouse, employment, and personal independence.

As the self-feelings of depression, distress, self-esteem, and mastery are likely influenced by the respondent's health status, the respondent's self-reported health status was included as a control. Self-reported health status was measured by asking the general question from the general health scale of the SF-36 (Ware and Sherbourne 1992) "In general, would you say your health is excellent, very good, good, fair, or weak?". Although in its original form this question asks the respondent to rank their health as "excellent, very good, good, fair, or poor," our interviewers unanimously felt that we should not ask Tanzanians if their health was poor and recommended we substitute "weak" for "poor."

Trust was measured through a series of statements developed by Larzelere and Huston (1980: 599).<sup>14</sup> Respondents were asked to indicate the degree to which they agreed or disagreed with the statements on a four-point scale.

The measure of commitment was derived from the research in social exchange and identity theories (Burke and Stets 1999; Sprecher 2001). Burke and Stets included

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<sup>14</sup> My partner is primarily interested in his/her own wellbeing. (*Mpenzi wangu anajijali zaidi mwenyewe*); There are times when my partner cannot be trusted (believe in intentions and abilities). (*Kuna nyakati ningine mpenzi wangu huwa haaminiki katika yale anayodhamiria kufanya*); My partner is perfectly honest and truthful with me. (*Hakika mpenzi wangu ni mkweli na mwaminifu kwangu katika maneno yake*); I feel that I can trust (believe in intentions and abilities) my partner completely. (*Ninajisikia kwamba ninaweza kumwamini kabisa mpenzi wangu katika yale anayodhamiria na anayoweza kufanya*); My partner is truly sincere in his/her promises. (*Mpenzi wangu ni mkweli kikweli katika ahadi zake.*); I feel that my partner does not show me enough consideration. (*Ninajisikia kwamba mpenzi wangu haonyeshi kunifikiria vya kutosha*); My partner treats me fairly and justly. (*Mpenzi wangu ananitendea kwa usawa na haki.*); I feel that my partner can be counted on to help me. (*Ninajisikia kwamba mpenzi wangu anaweza kuhesabika katika kunipatia msaada.*); and The longer I know my partner, the more I trust (believe in intentions and abilities) him/her (*Kadri ninavyozidi kumfahamu mpenzi wangu ndivyo ninavyozidi kumwamini katika anayodhamiria yake na anayoweza kufanya*).

measures of subjective commitment (how respondents would act if a negative event occurred) and behavioral commitment (whether the respondent turns to their partner or someone else when they are suffering a variety of problems). Respondents were asked to indicate the degree to which they agreed or disagreed with the statements on a four-point scale.<sup>15</sup>

Condom use was assessed using three measures: whether a condom was used the last time a married respondent had sex with their spouse;<sup>16</sup> whether a condom was used the last time a respondent who was not married had sex;<sup>17</sup> and consistency of condom use with non-marital partners.<sup>18</sup> Respondents are classified as using condoms consistently if they reported that they “always” use condoms with people who are neither their spouse nor people they paid for sex.<sup>19</sup> Consistency of condom use with a spouse is not presented

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<sup>15</sup> I want our relationship to last for a very long time. (*Ninataka uhusiano wetu udumu kwa muda mrefu sana*); I plan on continuing to improve my relationship with my partner. (*Nimepanga kuendelea kuboresha uhusiano wangu na mpenzi wangu.*); I would not feel very upset if my relationship with my partner were to end in the near future. (*Sitajisikia vibaya sana iwapo uhusiano wangu na mpenzi wangu utavunjika muda mfupi ujao*); It is likely that I will pursue or accept someone other than my partner within the next year. (*Inaonekana ninaweza kumtongoza au kumkubali mtu mwingine mbali na mpenzi wangu katika mwaka ujao.*); I feel very attached to my relationship with my partner. (*Ninajisikia nimeguswa sana na uhusiano wangu na mpenzi wangu*); I want my relationship with my partner to last forever (*Ninataka uhusiano wangu na mpenzi wangu udumu daima.*); I am concerned about the future of my relationship with my partner (*Ninaufikiria uhusiano wangu na mpenzi wangu kwa hapo baadae*); Who do you turn to for help when you are being bothered and needing to talk to someone about the problems (*Ni nani unayemkimbilia kupata msaada unapokuwa na matatizo yafuatayo kusumbuliwa na kuhitaji mtu wa kuongea nae kuhusu matatizo hayo*); Who do you turn to for help when you are feeling sad and needing to be cheered up (*Ni nani unayemkimbilia kupata msaada unapokuwa na matatizo yafuatayo kujisikia huzuni na kuhitaji kuliwazwa*)

<sup>16</sup> Did you use a condom the last time you had sex with your husband/wife/cohabiting partner? (*Ulitumia Kondomu mara ya mwisho ulipojamiiana na mmeo/mkeo?*)

<sup>17</sup> The last time you had sex, did you use a condom? (*Mara ya mwisho ulipofanya mapenzi ulitumia kondomu?*)

<sup>18</sup> How often do you use condoms with who were not you husband/wife or people you paid for sex? (*Ni kwa kiasi gani unatumia kondomu na wapenzi ambao si mme/mke wako wa kawaida ambao wale ambao sio wapenzi wako wa kila siku au unaowalipa ili kufanya mapenzi?*)

<sup>19</sup> The DHS defines higher-risk sex as sex with an individual who is neither a spouse or cohabiting partner. The DHS questionnaire asks respondents to define their partner as married, cohabiting, boyfriend, casual, or commercial sex client. This relatively new definition fits the measurement required by the President’s Emergency Plan and was a response to the difficulty that respondent’s had with the previous definition of regular and casual partners (Measure DHS 2008). In response to this new definition, many AIDS

because only three married respondents reported consistent condom use with their spouse.

Fidelity of married<sup>20</sup> and unmarried respondents was measured as whether the respondent reports only one partner over specific time periods: in the past month, past year,<sup>21</sup> and ever.<sup>22</sup> In addition to questions about the number of partners that the respondents had over various time periods, the male respondents were asked how many people they paid for sex in the past 12 months and their frequency of sex with a paid partner in the past month. Respondents who reported fidelity yet that they had paid for sex in the time period of reference were recoded as not being faithful for that time period.<sup>23</sup>

Due to a flawed skip pattern, only respondents who have ever used condoms were asked about their sexual partners in the past month.<sup>24</sup> Our measure of fidelity in the past month is measured based on married respondents' reported frequency of sex with various

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prevention programs now collect data on three types of partnerships: marital, higher-risk, and commercial. Instead of labeling this partner type as "regular, non-marital" or "casual" partners, and thus defining and limiting the type of relationship we were asking about, we chose to ask the youth if they had partners that they were not married to and did not pay for sex. As such, we avoid the problem of respondents who are engaged or otherwise serious about their partners not knowing whether or how to answer questions about a "casual" partner.

<sup>20</sup> Of the 6 respondents in polygamous unions, only one was male. The male respondent in a polygynous marriage reported no non-marital partners in the past month, but that he has paid for sex more than a month ago in the past year. As we are interested in fidelity to his union, this respondent was coded as faithful in the past month, but not faithful in the past year or over the course of his life.

<sup>21</sup> How many sexual partners have you had in the past 12 months? (April 2006-March 2007) (*Ni wapenzi wangapi umekuwa nao kwa kipindi cha miezi 12 iliyopita? [Kuanzia April 2006 – March 2007]*)

<sup>22</sup> How many sexual partners have you had in your life? (*Umewahi kufanya mapenzi na watu wangapi katika maisha yako?*)

<sup>23</sup> There was one recode for lifetime fidelity and five recodes for fidelity in the past year.

<sup>24</sup> Two-thirds of our sample reported that they have ever used condoms and are therefore included in the analysis of fidelity in the past month. A multivariate logistic regression (not shown here) suggests that the young people in our sample who have never used condoms differ from those who have ever used condoms in terms of the indicators assessed in this study. Young people with higher levels of commitment are less likely to report that they have ever used, as are those who feel that they are underbenefiting, those who are depressed, those who have greater AIDS prevention knowledge, male respondents, older respondents, and urban respondents. Respondents who have no education and who have been faithful in the past year are more likely to report that they have never used condoms.

partner types in the past month. Married respondents who reported paying for sex in the past month<sup>25</sup> or having a non-marital sexual partner in the past month<sup>26</sup> were coded as being unfaithful in the past month.

As past research demonstrates that young people's beliefs about condoms, perception of norms surrounding condoms, and perceptions of support for condom use are often important predictors of condom use, the questionnaire included an extensive module to gauge respondents' perceptions and beliefs about condoms. While most studies separate indices of norms surrounding condoms, and perceptions of support for condom use, a Wald test (not shown here) suggested that perceived condom norms,<sup>27</sup> beliefs about condoms,<sup>28</sup> instrumental support for condom use,<sup>29</sup> and social support for condom

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<sup>25</sup> How many times in the last month did you have sex with someone you paid for sex? (*Ni mara ngapi katika mwezi uliopita ulifanya mapenzi na mtu uliyemlipa ili kufanya nae mapenzi?*)

<sup>26</sup> How many times in the last month did you have sex with people who were not your husband/wife or people you paid for sex? (*Ni mara ngapi katika mwezi uliopita ulifanya mapenzi na wapenzi wako wa muda au wale ambao sio mmeo /mkeo au mapenzi wa kila siku au wale uliowalipa kufanya nao mapenzi*)

<sup>27</sup> Questions to measure perceived condom norms included the following on a 4-point scale: It is common for young people to use condoms with non-spousal partners (*Ni kawaida kwa vijana wadogo kutumia kondomu kwa watu wasio wapenzi wao*); Some married couples use condoms (*Baadhi ya wanandoa hutumia kondomu*); People are embarrassed to discuss condom use with their peers (*Watu wanaona aibu kujadili matumizi ya kondomu na wanarika wenzao*); Religious leaders are opposed to condom use (*Viongozi wa dini wanapinga matumizi ya kondomu*); It is a good idea to discuss sex with young children 10-12 year olds (*Ni wazo zuri kujadili kuhusu kufanya mapenzi na watoto wadogo wenye umri wa miaka 10-12*); It is a good idea to discuss condom use with young children 10-12 year olds (*Ni wazo zuri kujadili kuhusu matumizi ya kondomu na watoto wadogo wenye umri wa miaka 10-12*).

<sup>28</sup> Questions to measure beliefs about condoms included the following on a 4-point scale: Condoms break often (*Kondomu hupasuka marakwamara*); Condoms are porous (*Kondomu zina matundu*); Condoms are harmful (*Kondomu zina madhara*); Condoms are impregnated with HIV (*Kondomu zimepandikizwa VVU*); Condoms get stuck in the vagina (*Kondomu huwa zinanasa ukeni*); Condoms are not necessary with a trusted partner (*Kondomu hazina umuhimu kwa mpenzi unayemwamini*)

<sup>29</sup> Questions to measure instrumental support for condom use included the following on a 4-point scale: I get condoms from my friends (*Napata kondomu kutoka kwa rafiki zangu*); I give condoms to friends (*Nawapa rafiki zangu kondomu*); I and my friends could get condoms from our parents (*Mimi na rafiki zangu tunaweza kupata kondomu kutoka kwa wazazi wangu*); If I was too embarrassed to buy a condom in a shop, my friends would buy it for me (*Kama nitakuwa naona aibu sana kununua kondomu dukani, rafiki zangu wanaweza kuninunulia*); If a friend was too embarrassed to buy a condom in a shop, I would buy it for him or her (*Endapo rafiki atakuwa anaona aibu sana kununua kondomu dukani, naweza kumunulia*).

use<sup>30</sup> should be combined into one index. We refer to this combined index as positive condom perceptions.

The questionnaire included measures of the respondent's self-perceptions related to AIDS prevention. Our analyses of condom use include a measure of the respondent's condom use self-efficacy,<sup>31</sup> that is, the respondent's perceived ability to enact tasks related to condom use. The second perception that the individual has of themselves that is relevant to condom use is the respondent's perception as to whether AIDS prevention is within their control—the respondent's AIDS prevention locus of control.<sup>32</sup> The last self-perception related to condom use is the respondent's self-evaluation of their risk for HIV. Respondents who strongly disagreed with the statement “I am less likely to get HIV than most people” were classified as believing that they are at high risk of HIV.

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<sup>30</sup> Questions to measure social support for condom use included the following on a 4-point scale: My parents support condom use (*Wazazi wangu wanaafiki matumizi ya kondomu*); My religious leaders disapprove of condom use (*Viongozi wangu wa dini hawakubaliani na matumizi ya kondomu*); My teachers approve of condom use (*Walimu wangu wanakubali matumizi ya kondomu*); My local health worker encourages condom use (*Wahudumu wa afya wa eneo langu wanahimiza matumizi ya kondomu*); My local leaders support condom use (*Viongozi wa eneo langu wanakubaliana na matumizi ya kondomu*); My friends support condom use (*Marafiki zangu wanaafiki matumizi ya kondomu*).

<sup>31</sup> Questions to measure condom use self-efficacy included: I can always insist condom use with my sexual partner (*Wakati wowote naweza kusesitiza matumizi ya kondomu na mpenzi wangu*); I can always carry a condom with me, in case I need it (*Wakati wowote naweza kubeba kondomu, endapo ntaihitaji*); I can confidently ask for a condom in a shop (*Naweza kuwa huru kuulizia kondomu dukani*); I can stop before sex to use a condom, even if I am aroused (*Naweza kujizuia kabla ya kufanya mapenzi ili kutumia kondomu, hata kama nimesisimka*).

<sup>32</sup> Questions to measure the extent to which the respondent has an internal AIDS prevention locus of control included the following on a 4-point scale: It is up to the will of God whether or not I get HIV. (*Ni mipango ya Mungu kupata au kutopata VVU.*); Whether or not I get HIV is a matter of fate or luck (*Kupata au kutopata VVU ni suala la hatima/ bati*); My partner controls whether or not we use a condom (*Mpenzi wangu hudhibiti iwapo tutumie au tusitumie kondomu*); I can get HIV/AIDS even if I do my best to prevent it (*Naweza kupata VVU/UKIMWI hata kama nitajitahidi kuzuia*); I can do nothing to prevent HIV (*Siwezi kufanya chochote kuzuia VVU*).

Respondents were asked whether they agree or disagree with ten statements about HIV transmission to gauge their knowledge of transmission.<sup>33</sup> Knowledge of HIV transmission was measured by the number of correct answers to these ten statements.

As respondents' perceived support for their relationship, perceived pressure to have sex, and perceived ability to remain faithful to their partners are likely to be associated with their fidelity over various time periods, the questionnaire included measures of each of these. Relationship emotional support refers to the social support that the respondent feels that they have from various members of their community.<sup>34</sup> The respondent's perceived pressure to have sex refers to the extent to which the respondent generally feels that there is pressure to be sexually active.<sup>35</sup> The respondent's fidelity self-efficacy refers to the respondent's perceived ability to remain faithful.<sup>36</sup>

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<sup>33</sup> Sexual intercourse is the most common way of contracting HIV/AIDS (*Kufanya mapenzi ndio njia kuu ya kuambukiza VVU/UKIMWI*); I can get HIV/AIDS from a single sex act (*Ninaweza kupata VVU/UKIMWI kutokana na kufanya mapenzi mara moja*); You can get HIV/AIDS through kissing (*Unaweza kuambukizwa VVU/UKIMWI kwa kubusu*); You can get HIV/AIDS through hugging (*Unaweza kuambukizwa VVU/UKIMWI kwa kukumbatiana*); You can get HIV/AIDS through sharing utensils or food with an HIV infected person (*Unaweza kuambukizwa VVU/UKIMWI kwa kuchangia vyombo au chakula na muathirika wa VVU*); HIV/AIDS can be transmitted through vaginal fluid (*VVU/UKIMWI vinaweza kuambukizwa kupitia majimaji ya ukeni*); HIV/AIDS can be transmitted through semen (*VVU/UKIMWI vinaweza kuambukizwa kupitia shahawa*); HIV/AIDS can be transmitted through blood (*VVU/UKIMWI vinaweza kuambukizwa kupitia damu*); HIV/AIDS can be transmitted through breast milk (*VVU/UKIMWI vinaweza kuambukizwa kupitia maziwa ya mama*); An HIV test is the only way one can tell if one has HIV (*Kupima ukimwi ndiyo njia pekee mtu anaweza kuthibitisha kama ameambukizwa VVU*).

<sup>34</sup> Questions measuring relationship emotional support include the following on a 4-point scale: If I have problems in my relationship with boy/girlfriend, I can go to my religious leader for advice and support (*Kama nina matatizo katika mahusiano na mapenzi, ninaweza kwenda kwa viongozi wangu wa dini kwa ushauri na msaada*); If I have problems in my relationship with my boy/girlfriend I can go to my best friend for advice and support (*Kama nina matatizo katika mahusiano na mapenzi, ninaweza kwenda kwa rafiki yangu wa karibu kwa ushauri na msaada*); If I have problems in my relationship with my boy/girlfriend I can go to my brother/sister for advice and support (*Kama nina matatizo katika mahusiano na mapenzi ninaweza kwenda kwa kaka/dada kwa ushauri na msaada*); If I have problems in my relationship with my boy/girlfriend I can go to my parents for advice and support (*Kama nina matatizo ya mahusiano na mpenzi wangu naweza kuomba ushauri/msaada kutoka kwa wazazi wangu*); If a friend had many sexual partners, I would warn him or her about the risks (*Endapo rafiki yangu ana wapenzi wengi, nitamuonya juu ya hatari zake*).

<sup>35</sup> Questions measuring perceived pressure to have sex include the following on a 4-point scale: Boys pressure each other to have sex (*Wavulana huwa wanashawishiana kufanya mapenzi*); A boy needs to have sex to be considered a 'real man' (*Mvulana anatakiwa afanye mapenzi ili kuonyesha urijali wake*); Having



The respondents' socioeconomic status is measured using an index of household assets and amenities. The respondents were rank ordered by score and grouped into the three approximately equal categories of low, medium and high socioeconomic status.<sup>37</sup>

The respondent's level of education was classified as low if the respondent reported no education (6%, not shown) or that they did not complete primary school (13%, not shown), medium if they reported that they completed primary school (62%), and high if they reached secondary school or higher (19%). As age frequently does not have a linear relationship with our dependent variables, we coded the respondents' age as 15 to 19 years and 20 to 24 years. Additionally, we included an indicator of whether the respondent resided in a rural or urban area and an indicator of whether the respondent was Christian or Muslim.

There are a number of indicators that were not included in the questionnaire for the household survey. We have no indication of the respondent's fertility intentions or of their birth history. We neither have a complete nor a detailed relationship history for the respondents. Many of the measures about perceptions of condoms are specific to perceptions about the PSI brand, *Salama*. While these measures are ideal for monitoring and evaluating the *Salama* social marketing program, the measures cannot be used in the

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sex early will help prepare you for marriage (*Kufanya mapenzi mapema kunakusaidia kujiandaa kwa ndoa*); Girls pressure each other to have sex (*Wasichana huwa wanashawishiana kufanya mapenzi*); Girls are usually pressured by boys to have sex (*Kwa kawaida wasichana huwa wanashawishiwa na wavulana kufanya mapenzi*); It is never acceptable for a man to force a woman to have sex (*Haikubaliki kabisa kwa mwanaume kumlazimisha mwanamke kufanya naye mapenzi*).

<sup>36</sup> I would find it difficult to be faithful to my partner if other boys/girls wanted to have sex with me (*Nitapata ugumu kuwa mwaminifu kwa mpenzi wangu kama wavulana/wasichana wengine watataka kujamiiana na mimi*); It is impossible to be faithful to one person for your entire life (*Ni vigumu kuwa mwaminifu kwa mtu mmoja katika maisha yako yote*); I would find it difficult to have a long-term relationship, because I would want to have sex with other people (*Ningeweza kupata ugumu kuwa na mahusiano ya muda mrefu, kwasababu ningetaka kufanya mapenzi na watu wengine*).

<sup>37</sup> The assets and amenities include whether the household has electricity, a flush toilet, piped water, a radio, a TV, a refrigerator, a bicycle, a moped (pikipiki), and a car/truck. Most respondents (45%) reported two of the listed assets and amenities.

analysis of general condom use. Due to concerns about questionnaire length, we only have information on the respondents' number of partners over specific times. Ideally we would be able to calculate an indirect measure of fidelity from a detailed relationship history in addition to assessing the respondents' reported fidelity.

### ***Sample description***

#### *In-depth interviews*

A total of 39 individuals participated in the first round of in-depth interviews. Of the participants initially recruited, only 11 consented to provide contact information for their partners. In the second round, 18 participants were interviewed for a second time and 9 additional individuals were recruited to participate. A total of 16 couples were interviewed, 11 of whom were interviewed twice (in three cases only one of the members was available for interview). There was a substantial amount of change in the relationships of the young people interviewed twice. Of the 11 couples interviewed twice, four relationships ended and two couples became engaged between the two rounds of interviews.

The average age of all the male participants was 20.5 years old and the average age of all the female participants was 19.0 years old. On average, the male participants were 2 years older than their female partners. One couple was the same age, 3 couples had a one year age difference (in two of these couples the female participant was older), in four couples the male participant was two years older than his partner, in three couples the male participant was three years older than his partner, in one couple the female participant was three years older than her partner, in one couple the male participant was

four years older than his partner, and in three couples the male participant was six years older than his partner.

The majority of the youth interviewed in both rounds were Muslim (39 were Muslim and 9 were Christian). It is typical for Tanzanians to marry individuals from the same religion and the majority of the individuals interviewed shared the same religion as their partner, with the exception of 3 couples.

The majority of the youth interviewed were poor by urban Tanzanian standards. However, even the majority of the poorer participants had electricity and radios. Ten participants could be considered middle class and one of the respondents was wealthy. Youth whose parents were the head of the main family in a compound were considered of middle class. Middle class families tended to have TVs, radios, more space in the house, and nicer furnishing. Youth from poorer households tended to live in one room—possibly shared with others—in a compound. Most of the youth had cell phones, although the type of phone differed by the youth's economic standing. For example, most of the poorer youth had older Nokia cell phones while the wealthy youth could be found holding Motorola "Razors." The one wealthy participant from the in-depth interviews was receiving a high quality education and his family often traveled to Europe.

#### *In-person survey interviews*

The data from the survey interviews are at the individual level and we are not able to link the respondents' responses to a partner's interview. The sample used in this analysis—a sample of young people currently in relationships—had slightly more females than males (436 females, 390 males, see Appendix D: Table 1). The majority of the respondents are aged 20 to 24 (71.45%). Male respondents reported a slightly

younger mean age at first sex than female respondents (at age 15.99 compared with age 16.50 for females,  $p < 0.01$ ). A large majority of respondents resided in rural areas (85.17%). Over a quarter of the respondents reported that they were Muslim (28.68%). Twelve respondents reported that they did not have a religious affiliation and two respondents reported that they had a different, non-Christian denomination. For this analysis these respondents were grouped with Christian respondents.

***Table 1 about here***

The majority of respondents (61.89%) reported that they completed standard 7, primary school. Although approximately equal proportions of our sample reported that they did not complete primary school (19.36%) as reported that that they reached secondary school (form 1-4) or higher (18.75%), female respondents were more likely to report that they did not complete primary school (23.00% compared with 15.38% of males) and males were more likely to report that they reached secondary school or higher (22.05% compared with 15.73% of females,  $p < 0.01$ ).

By design, respondents' relative socioeconomic status fell into three categories. Most respondents were of medium socioeconomic status (45.22%) and more were of low socioeconomic status (34.80%) than were of high socioeconomic status (19.98%). Female respondents were more likely to be of lower socioeconomic status (38.73% compared with 30.51% of male respondents) and male respondents were more likely to be of high socioeconomic status (23.08% compared with 17.17%,  $p < 0.05$ ). This sex difference in socioeconomic status may be due to the fact that a larger proportion of females are married and their new household has not had the time to accumulate the same number of assets and amenities as would be found in the household of an unmarried

youth. Alternatively, poorer young women may be more likely to marry at younger ages, and therefore would be more likely to report that they currently have a partner than young women of higher socioeconomic status.

## **CHAPTER 5: ANALYSIS OF YOUTH'S DESCRIPTIONS OF THEIR RELATIONSHIPS**

The first analysis chapter uses the in-depth interviews conducted with young men and women residing in Mtoni, Dar es Salaam. Through participants' narratives of their relationships, we investigate how trust and commitment develop in the relationships of the young residents of Mtoni. The analysis of the in-depth interviews sheds light on the youth's understandings of how trust and commitment develop, and how satisfaction with their relationship and having their partners understand them are related to the development of relationships. We explore the various opinions, themes, and patterns that emerged during the in-depth interviews in Mtoni.

The interviews with young males and females allow us to explore gender differences in the process by which trust and commitment develop. The residual effects of the long-standing patriarchal tradition in Tanzania are likely to manifest themselves in differences in men and women's notions of what they can expect from their relationships with their partners. In this patriarchal tradition, men may expect to benefit more than women and women may expect to make more compromises in their relationships than men. Men and women's perceptions of their contributions compared with those of their partner may be affected by this tradition. A number of common themes emerged explaining the development of and relationship between trust, commitment, fidelity, and condom use.

The youth in Mtoni were aware that the way young people find the person they will marry is different now than it had been in the past. In the past, they explained, parents would tell their children who to marry whereas now most youth selected the

person they want to marry and then ask their parents for permission to proceed with the marriage. The youth believe that under the old process of union formation, most young people did not have relationships prior to their parents telling them who they were to marry. Nearly all of the youth talked about their parents and other adults in their community still believing that being in a relationship was a sign of bad *tabia*, or character. This seemed to be especially important for young women. As such, nearly all of the youth hid their relationships from their parents and other adults until they asked for permission to marry their partner.

Interviewer: Yeah? I didn't realize that Mariamu's mother lives right here (pointing) and you live right there (pointing just across the street). How'd you keep that a secret?

Idi<sup>38</sup>: If you remember, I told you that we never meet at my place. We meet by the bus stand.

Interviewer: But all of these women talk to each other, how don't they know?

Idi: They don't. It was a big project.

*(23 years old, Completed primary school, singer/DJ/textile worker, poor, Muslim)*

Mariamamu: Because in our society, if a girl has a boyfriend then they say she doesn't respect her parents and that she has bad *tabia*. So she has to keep it a secret so her parents won't know and people won't tell them.... It was difficult (for Idi and I) because people were seeing us together and started watching us and asking, "Why are you two so close together?" So it was so hard to keep them from knowing.

Interviewer: And do you think it was difficult for your boyfriend for things to be a secret?

Mariamamu: For him, he didn't keep it a secret because boys, when they get a girlfriend, they start telling their friends and they want people to know that they have a girlfriend.

Interviewer: why is that?

Mariamamu: Since he was proud. His friends were calling me "in-law, in-law!"

...

Mariamamu: Because in our society in Tanzania, if a girl has a boyfriend then people see her as not having a good *tabia*.

Interviewer: Why would she have a bad *tabia* if she has a boyfriend?

Mariamamu: It's just been like that since a long time ago. If people see you with a boyfriend they think that you don't have a good *tabia*.

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<sup>38</sup> All names have been changed to protect the identities of the participants.

Interviewer: But don't people need to have boyfriends in order to find someone to marry?

Mariamamu: Yeah. But people don't want their girls to have a boyfriend until they marry them. They want a boy who loves a girl to wait until she is ready to get married and then for him to go straight to her parents to ask for her hand in marriage and marry her. They should not start by being friends.

Interviewer: and is that realistic these days?

Mariamamu: no (laughing)

*(19 years old, secondary school student, middle class, Muslim)*

When youth were asked why there was a change from parents deciding who one is to marry to young people finding their own partners, many talked about the how in the past adults had absolute authority, but now youth would question a marriage that parents arranged. Nonetheless, interactions between young people and their elders remained bound by respect. As the youth feel that they must hide their relationships from their parents and other adults in their community, they are left navigating the obstacles of union formation with only their peers providing advice and support. Hiding their relationships from elders constrained the information that youth received about union formation and the feedback and information that they received about their partners.

Although the shift to youth finding their spouse instead of their parents was relatively recent most youth described a similar process for how their relationships began. Nearly all of the youth reported that young men must initiate the relationship. Most of the young men explained that they explore and investigate the girls for some time before they approach them—watching the girl and asking others about her. Typically, the young man approaches the young woman and tells her that he likes<sup>39</sup> her.

One day when I was coming from school I meet him and he said 'hey.' He wanted to come with me. He took my bag and said he had something to tell me. I said I

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<sup>39</sup> It is important to note that in Swahili there is no differentiation between liking someone and loving someone. Although the translation of *ninapenda* as love may sometimes overestimate the strength of the youth's affect, sometimes in this first interaction young men profess their intention to marry the young woman, in which case "love" may not be an overestimation of the strength of the affect.



didn't have time to talk with him so he just walked with me and didn't tell me anything. But another day he came with me and asked me if I had time that day. I said yes so he started telling me about wanting to be with me. He started telling me that he wants me to be his girlfriend. I told him that I wanted time to know him so it took about 3 weeks. After 3 weeks I told him that I accept being your partner but I want you not to have other girls, I want you not to make me angry, I don't want someone who doesn't behave well and who doesn't want schooling. *(Fatuma, 16 years old secondary school student, poor, Muslim)*

Although young men are supposed to initiate the relationship, the youth outlined appropriate ways for a young woman to flirt with a young man who she wants to notice her. One of the most common things the young people mentioned is for a young woman to be sure to be around to greet the man whenever she can. Some of the youth discussed young women playing a more direct role in beginning relationships. However, as the following description of how one young man was "approached" by his girlfriend demonstrates, young women who are seen to have "approached" their boyfriends do not appear to be approaching men directly. Young women who approach a potential partner seem more to be hinting that he should initiate a relationship than initiating the relationship themselves.

Baraka: She approached me. She asked me if I had a girlfriend. I told her no, but why are you asking me. She said no reason. So I realized that she had something. So then I decided to approach her.

Interviewer: And when you approached her, what did you say to her?

Baraka: I asked her if she has a boyfriend and she said no. So I told her that now we can be together.

Interviewer: If she hadn't approached you, would you have been interested in her?

Baraka: I liked her even before she approached me.

Interviewer: Why didn't you talk with her first?

Baraka: I think I was shy.

Interviewer: People say it is very hard for women; it must have been hard for her to approach you.

Baraka: Well, she didn't tell me everything, she was shy and she didn't ask me to start it, she couldn't get on with it (she only had asked if I had a girlfriend) *(20 years old, student in form 4, Muslim, middle class)*

While young men initiate relationships, young women have the right to accept or deny any requests. The youth explained that when a young man asks a young woman to start a relationship, the young woman will either immediately refuse the relationship or she will tell him that she needs time to consider it. The young women reported that even if they have been trying to get noticed by the man, they still must initially say they need time. The young men in our interviews waited from a few days to nearly a year before their relationship with their partners began. However, the young men said they were not nervous to find out if a girl would accept them because they knew that if she did not plan on accepting him that she would have immediately refused him.

There is an ambiguity in what happens during the time when a young woman is considering a relationship with a man who has approached her. All of the young people talked about exploring each other during this time. While the young men explore young women before approaching them, the young women may not have considerable knowledge of the man who has asked them to start a relationship and may genuinely need the time to explore him. Nonetheless, after a young man approaches his intended girlfriend he continues to consider her.

When the youth discussed exploring their partner, they used the Swahili word “*tabia*.” Consistent with other authors, we are unable to suggest an English word that conveys the essence of *tabia*. Setel describes *tabia* as “a combination of moral character, personality, and one’s human nature” (Setel 1996: p1173). When describing the type of *tabia* that they desired in a partner, the youth describe patience, being polite “... with me, when she’s alone, when she is with my friends,” not drinking, and not having many partners. Returning to Fatuma’s description of the beginning of her relationship with her

partner, young women often voice their expectations for their partner's *tabia* as a condition of accepting to begin the relationship. Fatuma asked that he be faithful, "not to make (her) angry," to be well behaved, and to appreciate the value of education. The young women's requests and expectations of potential partners were frequently shaped by their past relationships. Fatuma's ex-boyfriend was unfaithful to her while she was studying for her Form 2 exams, a time when students focus primarily on passing the exam so that they can continue their schooling. Her emphasis on the value of education as well as the need to be faithful reflects the difficulties she had with her previous boyfriend and her need for a different type of person in order for her relationship to be successful.

The youth discussed a person's behavior as the most important indicator of the general nature of a person's *tabia*. Consistent with description offered by Setel (1996), *tabia* is influenced by one's ancestors, one's ethnic group, one's friends, and money or alcohol. The youth discussed exploring their partner's *tabia* with the goal of learning about who their potential partners truly are. Before beginning the relationship, the youth appeared to want to know if their partner's character was good enough to start a relationship—or in other words if the potential partner is generally the type of person who can be trusted.

It does not appear that youth are sexually involved before the young woman officially agrees to begin the relationship. However, once a young woman accepts to begin the relationship, the couple may become sexually involved immediately or within the next year.

Akila: After the 7 months I accepted (Elimu). Then three months later we started having sex.

Interviewer: Do many people wait three months after having accepting before having sex?

Akila: No (emphatic)

Interviewer: How long do people tend to wait?

Akila: Some, even just a week.

Interviewer: Why did you wait three months?

Akila: I decided to wait three months because I was still exploring him. I wanted to know what type of person he is. He could have been pretending to be a good boy even though he is not. I wanted to know more about him and since he was not pushing me to accept him I had enough time to know about him before we had sex.

Interviewer: When you were interested in finding out if he had good tabia, what kinds of things were you looking for?

Akila: One thing... since he wasn't pushing me to have sex, he was telling me that we could have it when I'm ready. He was telling me this and I started thinking that maybe he is a good boy who really loves me. *(23 years old female, finished Form 4, training to be a waitress, middle class, Muslim)*

### ***Contents of relationships***

In general, the youth discussed beginning to have relationships as entering the next stage in their lives and how it is not realistic for parents to expect a couple to not be involved with each other before the engagement. The youth referred to a variety of motivations for entering this next stage of their lives and starting a relationship. Most of the youth mentioned a combination of love, sexual desire, wanting someone to share ideas with, peer pressure, emotional support, and financial support as motivations for having relationships before marriage despite the disapproval of their elders.

Anna: For sharing my ideas with and also having sex, because now I'm a grown up.

Interviewer: What ideas do you share with your boyfriend?

Anna: About education, because he is also a student... and also about life.

Interviewer: What do you talk about, about life?

Anna: We talk about ourselves, about marriage. What we would like to do, where to live, how many children, which job...

*(Anna, 20 years old, student in Form 6, Christian, middle class)*

Many of the young men said that they chose to begin stable relationships because they preferred to find one girl to fight the temptation to sleep with many girls. Their concern about temptation was not only due to the possibility of getting STIs, but also due

to a concern that having many partners is a sign of bad character. Although the majority of the young men in Mtoni were Muslim and would be allowed to have more than one wife, they made a clear distinction between having multiple partners and marrying two or more women.

Musa: I thought that since (I am of the right) age it's better to get one woman who'll be my wife instead of just going out with a girl, tomorrow another girl, then the next day another girl. I decided to find one and marry her (*Married, 24 years old, primary school education, poor, Muslim*)

#### *Support youth receive in relationships*

The youth described a wide range of instrumental and emotional support from their partners as well as the satisfaction that they get from providing each other this support. A large majority of the youth faced serious financial constraints. Many of the youth discussed how difficult life is, largely due to their financial situation. Although about half of the youth who were no longer in school had some source of income, few had stable jobs that provided them with reliable income. The students interviewed all discussed the financial hardship of not being allowed to work while in school. As such, all of the students were dependent on others for spending money. The financial constraints faced by nearly all of the youth interviewed frequently lead to their relationships performing two critical functions. First, a partner's advice and emotional support was of great consequence to the youth interviewed. Second, a partner was an important extension of one's safety net. The reciprocity of emotional and instrumental support between youth did not have to be in the same form as the support that the individual was given. Many of the students and partners of students discussed that as the students were rarely in positions to offer financial support, they often provided their partners with advice and emotional support.

Interviewer: what does she do that satisfies you?

Azizi: for example, one time, I decided to leave the house where I lived [and worked as a houseboy]. She even took food from her house and brought it to me. (It was) those reasons (that) made me choose her.

...

Interviewer: What help do you give her in your relationship?

Azizi: I always remember her. When I pass a store and I see a woman's outfit that fits her, I buy it for her. If I have extra money then I give it to her. I help her like that.

...

Azizi: Since we've been in a relationship for a long time, I think that she accepts me. And she knows much about my problems and all about me. She is the one who knows. So after a time I thought, why do I need all these girlfriends if there is one who loves me and I love her. ...

Azizi: We talk about our secrets, life, how we will succeed in life. For example, when I have quarreled with my friends, when I get home she is there and she comforts me. We comfort each other and she keeps me calm...

Interviewer: is it worth having just one (girlfriend now)?

Azizi: There's an advantage of having only one. It's working for me. I think that it's worth having one girlfriend because of the many risks of diseases, HIV, and so having one girlfriend will help prevent these diseases. It's not just like that, I trust her and know that she's the only one, I know that she's there for me, I'm committed to her and she's committed to me so that's what makes me feel comfortable with her and talking with you about her and telling you all of these things. (*Azizi, 18 years old, teenage runaway, some primary school, poor, Muslim*)

The advice the youth gave each other helped them work through the difficulties they faced. Youth would give each other advice on matters ranging from problems with their families, their relationships with their friends, their education, how to proceed if they failed their achievement exams, and what jobs to seek. In addition, the emotional support that the youth described appeared to help them weather the difficulties that they faced, even when there was nothing that a partner could do to improve the situation.

In addition to offering each other advice and support, the youth described various ways that they provided each other a safety net. The young people discussed sharing and providing each other with not only money, but also food and clothing. As Azizi discusses above, when he decided to leave the house where he was working as a houseboy, with

poor conditions with inadequate pay, his girlfriend brought him food. When his financial situation improved, he bought her clothing. Nearly all of the youth discussed sharing material goods and money with their partners when either their partner was in need or they found themselves with extra.

However, while the sharing usually had a positive effect on each partner's feeling that they could rely on the other, if the emotional support and instrumental support flowed too often or consistently in one direction then it had the potential to become a burden on the relationship. This burden on the relationship could become especially great if the support was flowing more often from a young woman to a young man. This was evident in one relationship where the young woman, Samara, was busy with a stable job but her partner was having a difficult time finding stable work.

Samara: I have been able to help Kafil with small things. For example there are days he goes to work and then there are days when he can't work so he needs a little money. If I have that amount of money then I give it to him.

Interviewer: Is it hard for a woman, like you, whose work is going well when her partner's work is not going well?

Samara: For some (women) it's a bit difficult, but for me it's fine and a normal thing. It can happen to anyone. ... (Men) shouldn't feel bad about it because one day it'll be him (who needs help), another day it might be me.

...

Interviewer: And how do you think he feels about it?

Samara: He's not comfortable with how long it's been, but I keep on telling him that it's okay and that hopefully things will change.

...

Interviewer: (Have there been) good changes in your relationship with Kafil?

Samara: Yes.

Interviewer: Like...

Samara: We've been able to handle each other in this difficult situation [his work problems]

*(Samara, 18 years old female, hairdresser, completed primary school, poor, Muslim)*

Despite Kafil feeling uncomfortable with Samara's helping her for an extended period of time, Samara appears to be looking to the long-term, expecting that at some

time she will need help and at other times her boyfriend will need help. Many of the young people who described more sharing of each other's burdens and advice also talked about feeling that they "really" knew and could rely on their partner. Helping each other through difficult times appeared to be important, and as Samara mentioned later in our conversation, having handled Kafil's problems finding work well is a mark of growth in their relationship.

Closely tied with knowing a partner's *tabia* and the increasing closeness and dependence on each other, the youth discussed that it was important to really know their partner and understand them. Additionally, it seemed that the youth were a source of having someone to verify who they are and how they acted.

Said: ... My fiancée and I, we understand each other and neither of us are tired of the other ...

Interviewer: what do you mean you understand each other?

Said: It's from the love that we have for each other that we understand each other. There is a saying that if two people's blood matches that's why they understand each other so well. So our blood matches.

*(23 years old, completed primary school, DJ, poor, Muslim)*

Jalali: ...Once you stop understanding your partner then trust decreases.

Interviewer: what do you mean by understanding?

Jalali: For example, if they are so close and helping each other in every way.

*(24 years old, unemployed, completed primary school, middle class, Muslim)*

### ***Condom use***

Most of the unmarried youth told us that they used condoms with their partners. This is consistent with the 2004-2005 DHS estimate that 69 percent of young males and 52 percent of young females residing in urban areas used a condom in their last sex with a non-marital partner (ORC Macro 2006). Although the youth said that they were using condoms for disease prevention as well as pregnancy prevention, when I would ask if they used condoms consistently, the youth nearly always said that they had to use



condoms consistently since they were not married so had to prevent pregnancy. It appears that even though youth use condoms to prevent diseases and pregnancy, their greater concern is preventing pregnancy.

Anna: The first is because of this disease, AIDS. And the second is because of pregnancy because we are students so we can end up having babies.

Interviewer: Is it hard to convince him to use a condom? People say men don't like condoms.

Anna: Oh, it's okay, but for my boyfriend, always. He asks if I'm okay [not in her fertile days] I say yes. If I'm not okay [during her fertile days] then I say no and he brings a condom. I like that. I like that about him.

*(Anna, 20 years old, student in Form 6, Christian, middle class)*

Baraka: We use a condom.

Interviewer: Every time?

Baraka: Yes.

Interviewer: Every single time?

Baraka: Yes, to prevent pregnancy, so we have to use it.

Interviewer: Is there any other way than condoms to prevent pregnancy?

Baraka: No there isn't another way. Just condoms.

*(20 years old, student in form 4, Muslim, middle class)*

It was rare for the young women to report using any method other than condoms to prevent pregnancy. The majority of the young women had only used condoms, although a few knew of periodic abstinence, pills, and injections. Most of the young women who had heard of hormonal methods said that they had also heard that hormonal contraception causes infertility.

Adila: There are other methods, like pills and injection... For such methods if you use them, then you won't be able to have a child (when you want to get pregnant).

*(18 years old female, student in form 3, engaged, poor, Muslim)*

The youth who were in school or were in relationships with students had additional motivation to not get pregnant—the youth explained that if a young woman was still in school then the couple had to avoid pregnancy, not only because her family would be angry, but because anyone who gets a school girl pregnant is put in jail. The

threat of pregnancy and incarceration appear to play a central role in condom use and condom negotiation among unmarried youth. However, while this policy makes it easier for young women to negotiate condom use, pregnant students are at risk of the father running away to escape punishment, leaving her to rear the child without support from the father or his family.

Salama: Yes, I was still in school but I was approaching my exams. (Jalali) decided to run since he knew I was still a student and I was pregnant... because if you get a student pregnant then you are taken to jail. ...When he got me pregnant he told me not to tell my parents who got me pregnant and not to mention his name. He said that if I did, he would do something bad to me...

Interviewer: What did he mean he would do something bad to you?

Salama: He said it because he was afraid that if I gave his name that my parents would go to the police and tell them to take him to jail. So he just told me that to make me afraid to tell his name.

Interviewer: But you told your parents?

Salama: No, I didn't tell them his name.

*(18 years old female, primary education, poor, Muslim)*

Many of the youth who had been in a relationship with their partner for a longer time reported that they no longer used condoms with their partners. Many of the youth said that once youth trust each other they stop using condoms. The youth discussed how the symbolism of not using a condom with a partner you trust played an important role in the decision to stop using condoms. Although the context of their conversations suggests that trust primarily refers to fidelity, many of the youth also implied that being able to trust that a boyfriend would claim responsibility for any pregnancy was also important.

Mariamou: (Idi) tells me, "don't you trust me? People who use condoms don't trust each other. We trust each other so we can't use them"

Interviewer: How did you feel when he said that?

Mariamou: I just accepted because I was afraid that if I continued to insist that we use a condom he would think that I don't trust him and he would think that I am not faithful.

*(19 years old, secondary school student, Muslim, middle class)*

Idi: Mariamu's the one who told me to stop. She said that since she trusts me then we don't have to use a condom anymore. But for me, I was using a condom at first because I didn't want her to get pregnant. But when she told me to stop then I stopped.

*(23-years old, primary education, DJ/singer, poor, Muslim)*

Although many of the youth said that condoms are not necessary with a trusted partner, few of the youth had ever been tested for HIV. Only one of the couples interviewed sought confirmation, through testing, that their trustworthy partner was not infected with HIV. However, even for this couple, testing for HIV was not easily accomplished.

Arifa: I trust him because we had tests. He didn't know that I took his blood. I did it without telling him.

Interviewer: Oh my, how'd you do that?

Arifa: He was sick and I told him that I have to take blood from you to test for malaria and typhoid. Then I took the blood from him and I went where I work and asked the technician to test for malaria, HIV, and typhoid. Then I found that he only had malaria. No typhoid, no HIV.

Interviewer: Have you ever been tested?

Arifa: We're all tested at school before exams (to become a nurse)

Interviewer: And does he know that he was tested?

Arifa: I told him later. I waited a month then I told him.

Interviewer: What did he say?

Arifa: He didn't say anything.

Interviewer: Was he angry?

Arifa: No.

Interviewer: Do you think he was just more happy than he was angry?

Arifa: Yes (laughing)

*(20 years old, nurse, completed primary school, poor, Muslim)*

While the youth reported that using condoms was common for youth who were not yet married, the youth said that they did not think it was common for married partners to use condoms with their spouse and none of the youth who were married reported use. However, some of the youth said that spouses would use condoms if one of the spouses was sick. Additionally, many of the youth said that a married person would use a condom with any extramarital partners for disease prevention.

Most (husbands) are afraid that maybe their wife will get infected. But nowadays women are so, so serious if their husband is infected. You will be very lucky if your man is infected and you are not, but it sometimes happens. She would go to the district commissioner and say my man is infected and he is forcing me to have sex without a condom. So then the government will go in.  
(Anna, 20 years old, student in Form 6, Christian, middle class)

Interviewer: Would you be okay if your fiancé had other partners as long as you didn't know?

Adila: yes.

Interviewer: How would you want him to make sure that you are healthy?

Adila: (He would) use a condom with other girls  
(18 years old female, student in form 3, poor, Muslim)

### ***Engagements and marriage***

Nearly all of the youth discussed their desire to marry their partner. While a partner's good *tabia* was discussed as a reason for entering their relationships, the youth talked about getting to know their partner's *tabia* more over the duration of their relationship and many referred to the quality of their partner's *tabia* when explaining why they wanted to marry them. As Baraka said when he was explaining why he wanted to marry his girlfriend, "There are few who are beautiful and have good *tabia*. (There's) only one out of many."

Many of the youth reported that they and their partner have discussed getting married. The topic of marriage appears to be discussed very early in their relationships, with some young men saying they want to marry their girlfriends when they first approach them to initiate the relationship. It seems that there are two related reasons why the discussion of marriage is initiated so early in the relationships. The first reason is the influence of the traditional marriages. If it remains inappropriate to have relationships before one is engaged, then serious relationships will likely transition to marriage more quickly than if premarital relationships were acceptable. Related to the first reason is that

young men often say that they want to marry the girls to convince them to agree to begin the relationship. The young women seemed to not want to feel like they have bad *tabia* by being in a casual relationship. Building a relationship with a man who wants to marry them does not seem to pose a risk to their *tabia*, even if they know that their partner is not yet in the position to get married. However, the young women's desire to believe they are in stable relationships and the ease with which many of the young men told them they wanted to get married, leaves young women in a position of deciphering if a young man is serious when he says that he wants to marry them, which they saw as the ultimate form of commitment.

Elizabeth: When we're talking he says that he'll marry me. But I'm not sure if he's telling the truth or just saying that he'll marry me.

Interviewer: Do many men just say that they'll marry you?

Elizabeth: Many (laughing)!

Interviewer: How can a woman know he's serious?

Elizabeth: I can't know until he comes and asks for my hand.

...

Elizabeth: Some mean that they love their partners when they say that they trust them. Some mean that they trust their partners when they give them a ring. Some say that they trust their partners when they go and ask for their hand in marriage. But you find that a boy could ask for your hand in marriage and at the same time he is going out with other women. So that woman says that she trusts him and knows that he's asked to marry her so maybe I have to trust him since I'm the one he's asked to marry. And that boy, since he knows that she'll trust him because they're engaged, he'll just continue with other girls until he has had his full and then he'll go and marry (his fiancé).

*(18 years old, some secondary, technical school, poor, Christian)*

Nearly all of the youth mentioned that if the male partner is not yet financially stable then it is difficult to get married. However, as gender roles largely remain traditional in Tanzania, a young woman's financial standing is not relevant. Young women must only wait until they have completed their education, or entered the university. As we only interviewed aged 15 to 24 youth who had a partner who was in the

same age group, the youth interviewed were close in age and the difference between when men are marriageable and when women are marriageable was a stressor for some relationships.

Interviewer: (Does your family) speak to you often about (getting marriage)?

Akila: They tell me that if he really loves me then why doesn't he just marry you?

Interviewer: and how does that make you feel?

Akila: I feel fine but because of the real situation—he doesn't have a job and I don't have a job—I can't just tell him to marry me while we both still don't have jobs.

Interviewer: Do you and he talk about getting married?

Akila: Frequently.

Interviewer: And what do you talk about when you talk about it?

Akila: We talk about how my family always tells me that I must get married that he should marry me. So we talk about when we'll get married. He tells me that since we both don't have jobs that we should wait. I tell him that we must be careful because something might happen before we get married so we should be careful now.

...

Akila: In truth, (my parents) don't feel comfortable that I've completed my studies and I'm still at home with nothing to do and not studying. Maybe they don't have money to give me and I'm just there. They want me to get married so I don't do bad things before I get married.

...

Interviewer: So you said that you think your parents are pushing you to get married for fear that something could happen before marriage, do you think that his parents are pushing him as well?

Akila: No. They don't. They know that he doesn't have a job and is still studying so they just tell him to continue studying until he gets a job and then he can get married.

...

Akila: Yes, it's hard. For our culture, I could get married without getting a job and just be a housewife, but for him, he has to get a job before he can get married so that he can take care of his family.

*(23 years old female, finished Form 4, training to be a waitress, middle class, Muslim)*

Despite the financial constraints to proceeding with a marriage, there were two engagements between the two rounds of interviews. The process of asking for permission to get married was different for these two couples. As mentioned before, Idi and Mariamu had gone to great lengths to keep their relationship hidden from Mariamu's family. In

contrast, Said and Arifa had met each other's parents and previously, informed them that they were in a serious relationship, and hoped to marry in the future. Said and Arifa's parents were not surprised when Said asked for permission to marry Arifa, however Mariamu's parents were not expecting the proposal.

Most of the youth who were engaged or married described a process in which the young man sent a proposal letter to the young woman's family. Many of the young men asked their girlfriend's family for permission to marry without telling their girlfriend that they had sent a proposal letter. Our first interview with Idi was shortly after he sent the proposal letter to Mariamu's family.

Idi: Someone had gone to bring the letter (in November).

Interviewer: Does Mariamu know?

Idi: I'm not sure if she knows, (maybe) if someone told her.

Interviewer: And you didn't tell her?

Idi: I didn't tell her because I don't want to rush into things and tell her all the things I've planned. There are many times I don't tell her everything I'm doing. It's only if people see something or tell her something... Things could change, maybe something'll happen. I don't want to disappoint her if something happens to prevent us from getting married.

...

Interviewer: Do boys often ask for their girlfriend's hand in marriage without asking her as well?

Idi: Many of the boys here don't tell their girlfriends when they are taking the (proposal) letters because they don't want their girlfriends thinking a lot about them, they don't want their girlfriends to know that they love them so much because if the girls know that their boyfriends love them so much then the boy will be doing any thing for her...

*(23 years old, singer/DJ/textile worker, poor, Muslim)*

Idi's proposal letter was not acknowledged for a few months after he sent it.

Although the young women told us that parents want a boy who will ask for their daughter's hand in marriage, the act of sending a proposal letter effectively informs the parents that their daughter is in a relationship and is sexually active. While the young men are not anxious when they are waiting for young women to decide whether or not to

begin a relationship, Idi appeared quite anxious while he was waiting to find out if he had permission to marry Mariamu. A few days after we first interviewed Idi, Mariamu's mother made small talk with us in the street. As soon as Mariamu's mother went back into the house, Idi ran to us wanting to know if she said anything about him. A few months later we asked Idi if it was uncomfortable after Mariamu's mother knew that he was her boyfriend and he described his anxiety as well as his meeting with Mariamu's father to discuss the proposal.

Idi: In the beginning it was a bit hard because if anything would have happened in her studies, the mother would have known that I was interfering with her progress... Then I was staying away and the mother told Mariamu to come and ask me why I was staying away from her and her home. At that time the father was not staying here, he was at another house. Then he was called home and told that I gave a (proposal) letter to him. Well, there was a lot of fighting and he was not pleased with the mother. When the father came he found the letter and he asked the mother do you know the guy who wrote the letter. She said she knew me and that I am just one of the boys on the street here. So the man did not like it. He said, look at the guys around here, they are not good, not calm, (there's) a lot of fighting so how could you let such things happen [Mariamu be in a relationship with one of them]? So Mariamu's mother had to defend me, and warn me. The father said okay, if you think you know him better, then there's no point in her continuing her studies because I know that since he lives nearby she'll end up pregnant soon. I think it's better that she stops school and they just get married. So the mother said that since I'm not a bad boyfriend, she's not expecting such things from me because if I were that type of person I wouldn't have sent a (proposal) letter. So after a long conversation then the dad demanded to meet me. So the mother talked with Mariamu and told her that the father wanted to meet me the following Thursday. So she came and told me. I was scared that I would go there and the father would change [Idi makes an angry face]... So on that day (my brother) came, around 8 pm, we went in and found there was a dinner prepared for us. We sat and started talking. My girlfriend started describing me so while she was explaining, the father asked how is it that you are still young and you want to get (married). And he asked me what my job was and I didn't want to talk much so I just told him that I do music. He said, "Oh you do music, what do you do? Do you play music, or do you sing?" So I told him that we rent equipment and that we have an office where we keep the equipment and that is our work. So the father said, "So you just wait for people to come and find you, what if they don't come? How will you get money?" So I told him that although the nature of my work is to just sit there and wait for people without anyone renting from us, but that even if it happens that only one person comes in a month, but the money



we get is (still) enough. He asked how much we charge to rent the equipment. I told him that it depends on the occasion, if it is a wedding or a kitchen party then we charge 50,000 T Shilling (42 USD). I also told him that sometimes we are rented for promotions and there is a time when it's for the whole month and each day they pay 30,000 T Shilling. So the father asked if each month it goes like that. I told him, no, that there are months when it goes well and there are months when it isn't as good. The father asked, "Now what happens if you don't get any business for the whole month, where do you get money to live by?" Well if it happens, then we have a computer where we burn the CDs that people want, so we get by. So the father said "You know that my daughter is currently in school, and if she passes (her form 4 exam) she will need to continue. If it happens that she doesn't do well (on her form 4 exam) then fine, you can go ahead with your plans." After some time, we went on with normal conversation, but I didn't stay long because I'm a bit shy with older people so I had to leave.  
*(23 years old, singer/DJ/textile worker, poor, Muslim)*

Idi's interaction with Mariamu's father embodies many of the themes that emerged from our conversations with the youth in Mtoni. Consistent with the young women's accounts of why they hide their relationships, Mariamu's father was angry she was in a relationship. Mariamu told us that her parents "were so angry telling (her) that they were wasting their money paying for (her) [school fees]." There appears to be a tension between keeping Mariamu, who did pass her form 4 exams, in school and having her married Idi before she becomes pregnant. Further, Idi is his parents' youngest child and, while he has extended family in Mtoni, he lives alone. As such, Idi is not as financially secure as Mariamu's family. Mariamu's father's concern about Idi's financial ability to support a family echoes the role of financial strain and the lack of stable jobs as a major obstacle for the youth who would like to get married.

In contrast with Idi's experience asking for permission to marry Mariamu, for Said getting permission to marry Arifa was much easier. Arifa and Said's families knew of their intentions to marry so once Said had purchased a ring he was able to surprise Arifa and her family.

Interviewer: When you say it was a surprise, how did you do it?

Said: I just decided one day to go and talk with the parents. I decided to take the ring too.

Interviewer: But you had to save money for the ring.

Said: Yeah, because it's made of gold.

Interviewer: Nice. How long did you have to save to buy such a nice ring?

Said: Like a month

...

Interviewer: Have there been changes since you got engaged?

Said: Yeah.

Interviewer: Like...

Said: The percent that we love each other has increased.

Interviewer: Why do you think your percentage of love has increased?

Said: Before the engagement Arifa would come for a day and then go away. But now, she can come and stay for longer.

*(23 years old, Muslim, DJ engaged, poor)*

Although Arifa and Said were open with their families about their relationship and their families knew of their intentions to marry, they appear to feel that their relationship was less constrained after they received permission to marry.

### *Premarital births*

Past research has focused on the role of a premarital birth in hastening a marriage. This was not the case for any of the three couples with a premarital birth. In one relationship the birth is a source of tension, with the boyfriend not acknowledging paternity. In the other two relationships, money was the main obstacle to marriage. In these two relationships, the youth said the pregnancy was not a crisis because they already knew that they wanted to marry their partner. However, as the couples did not yet have the money needed for bridewealth, the cost of having and caring for the child made it more difficult to accumulate the money needed to proceed with the marriage.

In the case of the third couple with a premarital birth, referred to above in Salama's description of her partner running away to escape jail, although Jalali continued to deny paternity after he returned, once his parents saw Salama's child, they announced

that the child was part of their family and Salama and their child moved into a room in their compound. Although Jalali had a relationship with Salama at the time of the first interview and everyone in the neighborhood referred to Salama's son as Jalali's, Salama never referred to her son as Jalali's because it angered him. When we returned for the second round of interviews, everyone told us the two had been recently married but that they were breaking up. Jalali did not want to talk with us for a second interview. When we interviewed Salama the second time, she told us that her and Jalali were just fine and that she just happened to not spend time at the house any more. Other individuals who rented rooms in Jalali's mother's compound told us that Salama was fighting with Jalali and his family and that she would come home late at night and leave early in the mornings. While we saw Salama daily when we conducted the first round of interviews, we never saw her during the second round of interviews, with the exception of the day we interviewed her away from the compound.

Jalali's family is wealthier than most families in Mtoni and because Jalali does not have a stable job, he remained dependent on his parents. While Jalali reportedly gets angry if anyone refers to Salama's son as his, his mother plays an active role in caring for the son and often has the child tied to her back. The other youth in the area say that Jalali is stubborn but cannot get angry with his mother because he remains dependent on her.

Whether Jalali and Salama were married or not between rounds of interviews seems irrelevant, their relationship appears to be over. Since both Jalali and Salama concealed the paternity of Salama's son during the interview (although Jalali inadvertently gave a start date for their relationship that was before Salama's son was conceived), it is difficult to discern whether the time around the first interview was a

particularly good time for their relationship, or if their relationship of over two years has always been rocky. Salama expressed ambivalence towards Jalali. Salama told us that if “the boy” who got her pregnant had not run away she would have wanted to marry him, but now she does not want to marry him since he scared her into hiding his identity. At the same time, Salama told us of her desire to marry Jalali and for Jalali to become her son’s father.

### ***Fidelity***

Fidelity appeared to be important to nearly all of the youth interviewed. Although the youth talked about frequently reminding each other to be faithful, these reminders appear to be merely ritualized. The main reason the youth believed that people are unfaithful is that they are not having their needs met by their current partner. If a person is not sufficiently cared or provided for, then it is possible that they might seek a partner who will sufficiently care and provide for them. Many of the youth reported that it is important to have a partner who truly knows and loves them. Some of the youth reported that if someone’s partner is not sufficiently affectionate then it is more understandable for that person to take another partner. The youth offered that men often have multiple partners because of the temptation from beautiful women, peer pressure, and if their partners are not meeting their needs.

Arifa: There are many reasons (why people are unfaithful). Maybe if you don’t show enough love to your partner, when he comes you aren’t happy, you’re just there staring at him while when he goes to another woman she’s happy for him, she puts water for him to bathe, she makes food for him, she takes him to bed. She’s doing a lot of things for him while when he comes to you, you just look at him and let him sit by himself. Then he’ll get tempted and will go for that other woman.

*(20 years old, nurse, completed primary school, poor, Muslim)*

Azizi: Women are tempting. Sometimes other women might just tempt me. You might even find me having more than one woman per day. Sometimes they seduce you. I think that this is because if a man is just not as faithful, he doesn't think forward he doesn't respect his girlfriend, he doesn't think of the many risks that are there for having many partners... So if you are not serious with one relationship, if you do not think forward, if you do not think about the risks of having many partners, then you will find yourself everyday changing and having new girlfriends if you are not committed to one.

*(Azizi, 18 years old, teenage runaway, some primary school, singer, poor, Muslim)*

While the youth often discussed men's desire for more than one woman, they also discussed female infidelity. Many of the young women knew of clichés or analogies to describe why women need more than one partner. Most of the analogies suggested that women need more than one man in order to ensure that all of their needs are met. Sometimes the clichés are used to refer to women's financial needs, other times they are used to refer to more diverse needs that women have. One analogy is that just as women need three stones to balance a pot when cooking, they also need three men to stand. A second cliché is that a woman needs a bucket, a bowl, and a cup. Often these three men represent women's need for sex and passion, need for financial stability, and need for general help. The young men also identified women's needs for support and passion as reasons for seeking additional partners.

Elizabeth: It's just a saying but it's not true. Even others say that you must have a bucket and a small bucket too because if you have a bucket on your head and it falls then you will still have another one in your hand. *(18 years old female, primary education, poor, Christian)*

Justini: Even if they are married and the man is not good in bed then the woman might decide to go to other men. Or if at first a man was good but then he doesn't have sex with her anymore then she will start looking for someone who could satisfy her.

*(18 years old male, student form 2, poor, Muslim)*

Although most of the youth framed infidelity as detrimental to the relationship, the young women discussed an important exception. The young women reported that it is more understandable for a wife to seek a second partner if she were having difficulties conceiving. Many of the young women expressed fear that if they could not provide their future husbands with children that their husbands would divorce them or take a second wife. In contrast with the hidden manner in which females attempt to deal with infertility, for Muslim males the solution to infertility is often to marry a second wife.

Salama: ...If she doesn't get pregnant while she's married (then) her husband might go to her parents and tell them that she can't have children so he's taking another wife or that he's divorcing her. (Women) are afraid that their husbands will take them back to their families if they don't give them children.

Interviewer: And is there anything a woman can do if she has problems getting pregnant?

Salama: If she has problems getting pregnant then there's nothing she can do if she knows that she's the one with the problem. But if they think that it's their husband who has the problem, they decide to have another man who will get them pregnant and they tell their husbands that the baby is theirs. The husband might believe them and raise the child and when they want to get another one then they go back to that man to get pregnant and they pretend that it's the husband's. *(18 years old female, primary education, poor, Muslim)*

Based on descriptions offered by the youth, it appears that infidelity is a symptom of problems in a relationship and an indication that the relationship is unofficially over. When discussing their past relationships, few youth spoke of a breakup that did not involve discovering a partner's infidelity. As the breakup histories the youth told nearly universally involved infidelity, most relationships appear to end by discovering that one's partner has moved on—in the form of hearing about them having a new partner. Most of the youth described avoiding their former partners when they wanted to end the relationships and that the partners eventually understood their intentions.

Elizabeth: It didn't take long (to end my relationships with the other boys)—I was just lying to them, I would tell them that no I can't come now because I have to cook for my grandmother. I can't come because I'm doing this...  
*(18 years old female, some secondary, technical school, poor, Christian)*

As youth did not discuss formal breakups and their relationships were hidden from the elders, allowing them to only see each other infrequently and discretely, it seems as if their relationship status became ambiguous when youth had disagreements with their partners. A poignant example of the consequences of the confluence of the parents' authority, the secrecy surrounding premarital relationships, and the ambiguity after a disagreement is Akila and Elimu's relationship. When we first spoke with Akila, she described how Elimu's patience in not pushing her to sleep with him convinced her he really loves her. Between interviews, Akila had the opportunity to be trained as a waitress in one of Dar es Salaam's nicest beach resorts. Akila enthusiastically embraced the opportunity to receive the training and possibly secure a stable job. Elimu was adamant against Akila taking the training. The two were clashing over Akila's future when suddenly Elimu's parents told him that he was accepted at a boarding school an hour south of Mtoni and was leaving immediately. Elimu packed and moved the day his parents told him, without resolving his disagreement with Akila.

Akila was left with the impression that Elimu wanted her to choose between him and becoming a waitress. Akila began her training after Elimu left for boarding school. Akila believed their relationship ended when she began training as a waitress while Elimu believed that Akila listened to his wishes and did not take the training.

Akila: the main problem was that Elimu didn't want me to take the course because he thought I'd be like a barmaid, meeting many other people, and that I would end up having bad habits.... He told me that if I wanted to work in a hotel, that I'd better take the course to be a receptionist. But I wasn't interested in that. So I told him that I want to be a waitress. So that's why we had problems.

Interviewer: so why was he afraid of you being like a barmaid?

Akila: [giggles] You know, when people talk about barmaids, they talk about (them) in places like this [Mtoni]. People go there and get drunk and just (have sex) so he was afraid that maybe it was the same with waitresses in the hotels.

...

Interviewer: And what was it that made you be able to (take the training despite Elimu's wishes)?

Akila: I was looking at my future and I think that the job will do me good. It's the job that I've wanted since I was in school. So I just had to do it no matter what he said. I wanted to stick to it because it's my future.

Interviewer: And when you made the decision, did you think it would cause you to break up?

Akila: At first I didn't think anything of it. I took it as a joke that he didn't want it. But when I told him that this February I was going to start the course, he got upset and changed.

Interviewer: Do you think he expected you to do what he told you to do?

Akila: At first he thought I would do what he said, but then I had my choice too.

Interviewer: Mmmm. And you've been very busy (with your training), but have you had the chance to meet anyone new?

Akila: I have met someone but I'm not sure (if I'll accept him)...

*(23 years old female, finished Form 4, training to be a waitress, middle class, Muslim)*

Akila was beginning a relationship with a new boyfriend when we talked with her the second time. In contrast, when we talked with Elimu at his boarding school outside of the city, he did not know that Akila began training as a waitress and he believed that the two were still together.<sup>40</sup> When Elimu returns from boarding school at the end of the school year he will discover that Akila has a new partner. Elimu will believe that Akila was unfaithful while Akila believed that their relationship ended when she began her training to become a waitress.

The lack of a clear end to premarital relationships may be due to the looser construction of premarital relationships. In contrast, there were clear consequences and ends to relationships once the couple was married or engaged. Further, the family was an

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<sup>40</sup> Consistent with our promise to all of the youth we interviewed, we did not tell any partner anything that their partner told us.



important resource for wives in dealing with an unfaithful husband. Nearly all the respondents discussed how wives would go to the elders if her husband was unfaithful. While there was some variation in the youth's perception of the extent to which wives would try to deal with a husband's infidelity directly, nearly all of the youth reported that wives would go to the elders if they were unable to change their husband's behavior. The youth's perception of women's reliance on elders suggests that it is generally not acceptable for infidelity to occur, even among men. The elders appear to be the authorities that women can go to for help.

Interviewer: And what happens if a husband is unfaithful?

Jalali: At first if he's unfaithful she might put up with it, but as time continues a woman might also do the same and find another partner or she might go and tell the elders to talk with her partner, or they might break up.

Interviewer: Why would the elders care?

Jalali: If she tells the elders then they'll come to the husband and tell him that if he has chosen to get married then he must really stay with her and not have any other women outside. If he wants to stay with her then he must not have any other partners. But if they were just partners and not married then it's hard for them to come and say anything, even if a woman goes to her elders and says that her partner is not faithful to her.

*(24 years old, unemployed, completed primary school, Muslim, middle class)*

In contrast, the youth discussed how husbands have the power to deal with their wives infidelities directly. Nearly all of the youth reported that if a husband discovered that his wife was unfaithful that he would divorce her.

Although Haram (2005b) found that among Meru youth, secrecy and discretion were more important than fidelity, only two young women echoed this idea. The majority of youth placed a higher value on actual fidelity. While Fatuma discusses the importance of keeping infidelity hidden, Adila, in her quote above, also emphasized that her fiancé could keep her healthy by using condoms if he had sex with other girls.

Fatuma: For example, when he has another partner near where I live, he should not show me. If he doesn't do it secretly and I easily find out, then I think that would mean that he doesn't respect me, so he should do all these other bad things in another place to not show me.

Interviewer: Is it better if you don't know?

Fatuma: It's better that he doesn't show me, it's better that I don't see any of his bad behaviors. I want someone who won't show me.

*(16 years old female, secondary school student, poor, Muslim)*

### ***Trust and commitment***

Trust, commitment, and fidelity were relationship characteristics that the youth found hard to clearly separate from one another. The youth often found it hard to talk about when there could be one but not the other. In Swahili, the word used for trust is *uaminifu* meaning "believable." *Uaminifu* is also used to describe fidelity (*Uaminifu moja kwa moja*, believable one with one). Further, the notion that a relationship is believable is close to the notion that it is real or committed.

Consistent with the linguistic ties between trust and fidelity, when we asked youth what it means to trust a partner, the majority of the youth said that they could trust a partner who is faithful to them. Some youth also highlighted the importance of being able to trust someone to keep promises and secrets. Many of the youth were hesitant to trust their partners completely and believed that doing so was a risk, as Musa highlights.

Musa: When people are faithful to each other then they trust each other. This is what people should be reminding each other of so that they don't face the risk of diseases. So people should be close to each other and be faithful so that they can trust each other.

Megan: Other than being sexually faithful, what other things do you need to trust a partner?

Musa: What is important is to be courageous so that you can trust someone. If you believe in God then you ask him to give you courage to trust someone then you can trust her and know that she can't do bad things against you.

*(Married, 24 years old, primary school education, poor, Muslim)*

Although the youth frequently limited their discussions of trust to sexual fidelity, many of the youth invoked the notion of trust when describing their partner's important characteristics. As discussed above, the youth appear to investigate whether a potential partner has trustworthy behavior before they are willing to begin their relationships. In describing their current relationships, the youth described their partners' behaviors in ways that demonstrated their partners' good intentions towards them as well as their reliability. For example, Azizi described how he relied on his girlfriend for food so he could leave a bad work environment. He went on to explain "...I trust her and know that she's the only one, I know that she's there for me, I'm committed to her and she's committed to me so that's what makes me feel comfortable." Additionally, Samara described how despite Kafil feeling uncomfortable accepting her help, she felt that their relationship had grown from his relying on her and her ability to help him. Furthermore, Jalali highlighted that understanding a partner comes from being close to one's partner and helping them, yet when partners are not close and helpful their trust for each other diminishes.

The youth often defined a committed relationship as one where the partners love each other and are exclusive. As the youth often explained that marriage is the height of commitment, talking about marriage is important in committed relationships. Generally, relationships on a path to marriage were seen to be committed. The youth appeared to think trust and commitment were characteristics found in the same types of relationships. Returning to Samara's description of helping Kafil, although they are not yet engaged, Samara has a long-term perspective, highlighting that while she is helping Kafil now, in the future she will likely need his help.

## **CHAPTER 6: THE DEVELOPMENT OF TRUST AND COMMITMENT THROUGH INTERACTIONS WITH PARTNERS**

Three theoretical models of the development of trust and commitment are tested in this chapter using data from PSI's household based survey of Tanzanian youth aged 15 to 24. The three models are based on the three a priori theories of trust and commitment: the equity theory model, the investment theory model, and the identity theory model discussed in Chapter 2. While couples were sampled in the in-depth interviews, in the household survey the sampling was at the individual level without the individual's partner being interviewed. The unit of analysis in this chapter is the individual and we focus on individual's reports of their own self-feelings, their perceptions of their relationship, and their perceptions of what their partner expects of them compared with how they act. The measures used to indicate each of these self-feelings or perceptions were adapted and refined based on cognitive interviews conducted at the end of the in-depth interviews in Mtoni. Additionally, before these elements were included in the questionnaire, we reviewed the in-depth interviews for verification that these factors played a role in the youth in Mtoni's understanding of relationship development.

First, we examine the means and standard deviations of the variables in the equity theory, the investment theory, and the identity theory models by sex, socioeconomic status, level of education, and rural/urban residence (See Appendix B: Table 2). This allows us to examine the average quality of other alternatives, level of investments, underbenefiting, overbenefiting, self-verification, self-esteem, mastery, depression, distress, trust, satisfaction, and commitment in the sample as well as whether these variables differ significantly by the respondents' characteristics.

Next, we tested the assumption that the effects of the variables in each model were the same for female and male respondents. To compare the effects, we tested if the covariance matrices were different for females than they were for males using the statistical software package, M-plus (not shown). The covariance matrices were not significantly different for females than they were for males for the investment theory model or the identity theory model. As the effects were not significantly different for the investment theory model or the identity theory model, the models are not estimated separately for females and males. However, because the covariance matrices for the equity model were different for females than they were for males, the equity theory model was estimated separately for males and females.

Third, we estimate the path models represented in Figure 1 for Equity Theory and Commitment (see p13), Figure 2 for Investment Theory and Commitment (see p14), and Figure 3 for Self-verification, Trust, and Commitment (see p19) using the statistical software package, M-plus. Path analysis is used to test causal structures among measured variables. The causal structures tested are based on the a priori theories. The paths in model represent the hypotheses discussed in Chapter 3. The standardized estimates are presented in Table 3 for the equity theory model, in Table 4 for the investment theory model, and in Table 5 for the identity theory model. The standardized estimates are standardized based on the variable's variance. The standardized estimates presented in Tables 3, 4, and 5 will allow us to assess the extent to which our hypotheses are supported by the data.

The standardized estimates are interpreted as being the association (in terms of a standard deviation) that a standard deviation of change in one variable has with another

variable in the model. For example, if the estimate for the path between trust and commitment is 0.5 then a standard deviation increase in trust is associated with half of a standard deviation increase in commitment. As these data are not longitudinal, causality cannot be asserted. However, the results may either be consistent or inconsistent with the theoretical model that one variable causes a change in another.

Path analysis is a confirmatory method, not exploratory. As such, modifications to the model should not be made without validation from other data to ensure that the modifications are not unique to the data analyzed. In addition to being able to represent the structural paths behind hypothesized theories, path analysis allows the calculation of direct effects of one variable on another, the indirect effects of one variable on another, and the total effects of one variable on another.

In path analysis, a just-identified model has the same number of parameters to be estimated as there are unique pieces of information in the covariance matrix. In other words, there are the same number of equations in the model as there are unknown parameters to be calculated. While just-identified models are empirically solvable, they also reproduce sampling error and most fit indices cannot be calculated. Most path models are over-identified models with fewer parameters to be estimated than unique pieces of information in the covariance matrix. Fit indices are calculated for over-identified models.

To have a satisfactory data-model fit a combination of two indices should meet specific guidelines: the Comparative Fit Index (CFI) should be greater than or equal to 0.90 and Standardized Root Mean Squared Residual (SRMR) should be less than or equal to 0.10; or the Root Mean Squared Error of Approximation (RMSEA) should be less than

or equal to 0.08 and SRMR should be less than or equal to 0.10 (Hu and Bentler 1999; Kline 2005). The SRMR is an absolute fit index, comparing the observed with the model implied covariance matrix. The RMSEA is a parsimonious fit index that adjusts for model complexity. The CFI is an incremental fit index, comparing the target with the baseline model. Finally, we will discuss the comparative fit of the theoretical models. The Akaike Information Criterion (AIC), a parsimonious fit index, does not require the models to be nested in order to discuss relative model fit. Lower AIC values indicate better model fit.

### ***Sample characteristics***

#### *Relationship characteristics*

There were no significant sex differences in the level of trust, commitment, perceived level of alternatives, or satisfaction. Female respondents indicated higher levels of investments in their relationships than male respondents (2.97 compared with the mean for males of 2.88 on a scale of 1 to 4,  $p < 0.01$ ). Male respondents were more likely to indicate that they were underbenefiting (0.22 compared with the mean for females of 0.10 on a scale of 0 to 1,  $p < 0.01$ ) and less likely to indicate that they were overbenefiting (0.07 compared with the mean for females of 0.19 on a scale of 0 to 1,  $p < 0.01$ ). Male respondents indicated a higher level of self-verification by their partners than female respondents (4.35 compared with the mean for females of 4.28 on a scale of 1 to 5,  $p < 0.01$ ).

Few characteristics of the relationship differed significantly by socioeconomic status, education, or location. Unexpectedly, the availability of potential alternative partners or means of having various needs fulfilled was reported to be higher among

respondents from rural areas (2.44 compared with the mean for urban respondents of 2.30 on a scale of 1 to 4,  $p < 0.05$ ). Satisfaction in one's relationship with one's main partner was higher among respondents of higher socioeconomic status (ranging from a mean of 3.26 for respondents of low socioeconomic status to 3.37 for respondents of high socioeconomic status,  $p < 0.05$ ). Alternatively, trust in one's main partner was lower among respondents who attained higher levels of education (ranging from a mean of 3.16 for respondents with low educational attainment to 3.00 for respondents with high educational attainment,  $p < 0.05$ ).

*Table 2 about here*

### *Self-feelings*

There were no sex differences in feelings of self-esteem, mastery, or depression. However, female respondents indicated higher levels of distress than male respondents (2.40 compared with the mean for males of 2.28 on a scale of 1 to 4,  $p < 0.01$ ). Self-esteem varied by socioeconomic status and education. Self-esteem was higher among respondents of higher socioeconomic status (ranging from a mean of 2.81 for respondents of low socioeconomic status to 2.94 for respondents of high socioeconomic status,  $p < 0.01$ ). Similarly, self-esteem was higher among respondents who had attained higher levels of education (ranging from a mean of 2.83 for respondents with no education or incomplete primary schooling to 2.96 for respondents with secondary or higher education,  $p < 0.01$ ).

### *Results of path analysis*

As discussed above, the models of investment theory and identity theory are not estimated separately by sex. However, as the covariance matrices for the equity model



were different for females and males, the model of equity theory was estimated separately for males and females.

### *Equity theory*

Results of the path analysis for equity theory are presented in Table 3 for females and for males. For females, the equity theory model does not fit the data. However, when estimated for male respondents, the model has marginally acceptable data-model fit, with the CFI and SRMR within acceptable ranges (CFI=0.916; RMSEA= 0.088; SRMR =0.051). As the poor data-model fit for the female respondents could bias the results, the estimates are not discussed here. However, it should be noted that although the overall model does not fit the data, specific variables in the model may have relationships with commitment. Rejecting the model based on poor data-model fit is finding that the causal structure implied by equity theory does not describe the data for female respondents.

### ***Table 3 about here***

Although we reject the equity model as a possible representation of the relationships between the variables for females, we fail to reject the equity model estimated for male respondents. According to equity theory, benefiting either more or less than one's partner this will lead to distress. Distress in turn will lead to lower levels of satisfaction and commitment (Walster (Hatfield) et al. 1978; Sprecher 2001). Conversely, individuals who perceive equity will have lower levels of distress, leading to higher levels of satisfaction and commitment. Although the data-model fit is acceptable for the equity model estimated for male respondents, the relationships among the variables found in the data are not consistent with equity theory. Among male respondents,

overbenefiting was associated with lower levels of distress (-0.133,  $p < 0.01$ ).<sup>41</sup> The relationship between underbenefiting and distress was not statistically significant. Similarly, distress did not have a statistically significant relationship with satisfaction. However, consistent with equity theory, distress was associated with less commitment. A standard deviation increase in distress was associated with a 0.237 standard deviation decrease in commitment ( $p < 0.01$ ).

#### *Investment theory*

The investment model is a just-identified model and fit indices other than the AIC are not calculated. Path analysis is used for the analysis of the investment model in order to maintain consistency of statistical software used in the analysis of the development of commitment.

#### *Table 4 about here*

According to investment theory, an individual's dependence on a relationship is shaped by one's satisfaction with a partner's fulfillment of one's needs, perceptions of the quality of alternatives to a relationship, and investments in the relationship. In the theoretical model, satisfaction and investments are positively related to commitment, while comparison level of alternatives is negatively related to commitment. Although the positive relationship between investments in the relationship and commitment was not statistically significant, the negative relationship between the level of alternatives and commitment as well as the positive relationship between satisfaction and commitment are consistent with investment theory. An increase of one standard deviation in the perceived level of alternatives is associated with a decrease of a 0.127 standard deviation in

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<sup>41</sup> Standard deviations range from -1 to 1 and in practice the estimates are less than 1 and greater than -1. Showing three significant digits, as we do throughout this analysis involves displaying three decimals.

commitment ( $p < 0.01$ ). An increase of one standard deviation in satisfaction is associated with an increase of a 0.263 standard deviation in commitment ( $p < 0.01$ ).

### *Identity Theory*

Burke and Stets estimate the identity model twice because of the multicollinearity among the two positive self-feelings and among the two negative self-feelings. The models including self-esteem and depression are estimated separately from the models including mastery and distress. Although Burke and Stets find the results of these separate analyses to be similar, we do not. We find poor data-model fit for the identity model with distress and mastery.<sup>42</sup> When we change the pairings of self-feelings to self-esteem with distress and mastery with depression, we find the model with distress has poor data-model fit (CFI=0.754; RMSEA=0.168; SRMR=0.080). Consistent with Burke and Stets, we present models including self-esteem and depression (CFI=0.980; RMSEA= 0.067; SRMR= 0.019) separately from the model including mastery and distress (CFI=0.760; RMSEA =0.165; SRMR =0.072).

### *Table 5 about here*

According to identity theory, the self-verification process leads directly to trust in a partner. Additionally, self-verification leads to positive self-feelings: self-esteem and mastery while a lack of verification will lead to depression and distress. In addition to the direct relationship between self-verification and trust, self-verification has an indirect relationship with trust through these self-feelings. Positive self-feelings from the self-verification process should result in an increase in trust in a partner, and negative self-feelings should result in a decrease in trust in a partner. Ultimately, self-verification and

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<sup>42</sup> The modification indices suggest that if we allow distress and mastery to have a direct effect on commitment that the model would fit the data quite well. This relationship should be cross-validated before considering modifying the theory.

positive self-feelings operate through trust to contribute to the development of committed relationships.

Table 5 shows that self-verification is associated with higher levels of self-esteem and lower levels of depression. For each standard deviation increase in indicating one's main partner verifies one's identity, there was a 0.083 standard deviation increase in self-esteem ( $p < 0.01$ ). For each standard deviation increase in indicating one's main partner verifies one's identity, there was a decrease of a 0.108 standard deviation in depression ( $p < 0.01$ ). Both of these self-feelings had the hypothesized relationship with trust. A standard deviation increase in self-esteem is associated with a 0.230 standard deviation increase in trust ( $p < 0.01$ ). A standard deviation increase in depression is associated with a 0.146 standard deviation decrease in trust ( $p < 0.01$ ). While we did not find a direct relationship between self-verification and trust, the indirect relationship between self-verification and trust, through self-esteem and depression, was significant. A standard deviation increase in self-verification is associated with a 0.035 standard deviation increase (not shown,  $p < 0.01$ ) in trust through the relationship that self-verification has with self-feelings and the relationship between the self-feelings and trust. Trust has a strong positive association with commitment. A standard deviation increase in trust in one's main partner is associated with a 0.896 standard deviation increase ( $p < 0.01$ ) in commitment to that partner. Ultimately, self-verification by the respondent's main partner has a significant relationship with commitment to that partner through self-feelings and trust. A standard deviation increase in self-verification by a partner is associated with a 0.077 standard deviation increase ( $p < 0.01$ ) in commitment to that partner through the other variables in the model.

## ***Discussion***

### *Model comparisons*

We do not find the equity theory model useful in describing the development of commitment among Tanzanian youth. Among females, we find poor data-model fit. Among males, the relationship between equity and distress contradicts the relationship hypothesized by the theory.

When we assess the comparative fit of investment theory and identity theory, we find no remarkable difference between the two models in terms of their AIC scores. The AIC is a parsimonious fit index where lower AIC values indicate better model fit. The identity theory model had an AIC of 4310.39 and the investment theory model had an AIC of 4341.56. However, reviewing the extent to which the hypothesized relationships among the variables are found in the estimated models, differences in between the two theoretical models' ability to explain commitment emerge.

According to investment theory, satisfaction and the availability of alternatives cannot sufficiently explain commitment to a relationship (Rusbult et al. 1998). Investment theory suggests that the more one has invested in a relationship, the greater the costs of ending the relationship and the greater the individual's dependence on the relationship. As expected, relationship satisfaction had a positive relationship with commitment and the availability of alternatives had a negative relationship with commitment. However, the results are not consistent with a theoretical model in which the level of investments in a relationship has a substantial role in relationship commitment: the relationship between investments and commitment was not statistically significant ( $p=0.20$ ).

The identity theory model is substantially more complex than the investment theory model. With the exception of the direct relationship between self-verification and trust, the structural relationships in the identity theory model are as hypothesized by the theory. The direct relationship between self-verification and trust is in the hypothesized direction, yet fails to meet the standards for statistical significance ( $p=0.09$ ). However, when we estimated the model with mastery and depression (not shown), the direct relationship between self-verification and trust is statistically significant ( $p<0.05$ ). Taken together, the findings suggest that identity theory is the only theoretical model tested in this analysis which may represent an accurate description of the development of trust and commitment among young adults in Tanzania.

As discussed above, all three theoretical models fail to explicitly incorporate gender in their discussions of development of trust and commitment. Prior to estimating each of the theoretical models, we tested for whether the effects in the models were significantly different for female respondents than they were for male respondents. While we did not find statistically significant differences in the investment theory model or the identity theory model, the covariance matrices for the equity model differed by sex. Further, among females there was poor data-model fit for the equity model, yet marginally acceptable data-model fit among males. Considering that equity theory's basis of comparison is one's opposite-sex partner,<sup>43</sup> one would expect that in a highly male dominated society, women not feeling that they have equitable exchanges with their male partners may not have the same effect as it would for men in the same situation. Additionally, it may be common for males to expect to benefit more than females from

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<sup>43</sup> Same-sex relationships are extremely uncommon in Tanzania. Investment theory's basis of comparison is what one expects for *one's self* from a partner.

their relationships. Under these conditions, a male who does not feel that he is benefiting more than his partner might feel distress, as is suggested by our data. Taken together, these results and the poor data-model fit among females may suggest an important role for gender in how perceived equity is related to the development of commitment in Tanzania.

## **CHAPTER 7: THE RELATIONSHIP BETWEEN TRUST, COMMITMENT, FIDELITY, AND CONDOM USE**

This chapter explores the relationship between trust, commitment, fidelity, and condom use. The data used in this chapter are from the PSI/Tanzania TRaC survey, where the sampling was at the individual level without the individual's partner being interviewed. Three multivariate logistic regressions for condom use for females and males were estimated separately using the statistical package STATA. Condom use was assessed for condom use at last sex with a spouse, for condom use at last sex with a non-marital partner (for unmarried respondents), and for consistent condom use with a non-marital partner<sup>44</sup> (See Appendix B: Table 6 and Table 7).

Given the number of detailed questions about condoms that the respondents were asked, we were challenged to present parsimonious models of condom use. We began with a basic model of the variables discussed in Chapter 3 and control variables. To test for improvements in the fit of the model, likelihood ratio tests were performed to examine if adding indicators to this basic model improved the fit of the model of condom use. Variables tested for inclusion in the model included indicators such as the respondent's age at first sex, whether a condom was used the first time the respondent had sex, if the respondent had ever been tested for HIV, if the respondent paid someone for sex in the past year, and the respondent's self-feelings. As the addition of each of these variables did not improve the fit of the model, these variables were not included in the analysis.<sup>45</sup>

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<sup>44</sup> As only three married respondents reported consistent condom use with their spouse, we do not analyze consistent condom use among married respondents. Married respondents with a non-marital partner are included in this analysis.

<sup>45</sup> See Appendix C Tables A, B, and C for the multivariate analyses that included self-feelings.



The multivariate models presented represent the parsimonious models that explain a level of variation in condom use that is not significantly less than is explained by a model with all possible variables included in the analysis. However, a number of indicators related to condom use were not measured and were unable to be included in the analysis, including the respondent's fertility intentions and condom availability. Future studies should include these variables. Table 6 shows the univariate analyses of each variable's relationship with condom use, presented in odds ratios (OR) and 95% confidence intervals (CI). Table 7 shows the multivariate analyses, presented in odds ratios (OR) and 95% confidence intervals (CI) of reporting condom use in the specified situation.

Three multivariate logistic regressions for reported fidelity for females and males were estimated separately: one for fidelity in the past month (among married respondents who have ever used condoms), one for fidelity in past year, and one for lifetime fidelity (See Appendix B: Table 8 and Table 9). The models presented in Table 9 represent the parsimonious models that explain a level of variation in fidelity not significantly less than is explained by the model with all possible variables included. Consistent with the model testing for condom use, likelihood ratio tests were performed to examine if adding indicators to the model containing the variables discussed in Chapter 3 improved the fit of the models of fidelity. Variables tested for inclusion in the models included indicators such as the respondent's age at first sex, if the respondent had ever been tested for HIV, and the respondent's self-feelings. Only the addition of the respondent's age at first sex improved the fit of our model and is included in the analyses presented in Table 9. Table 8 shows the univariate analyses of each variable's relationship with reported fidelity,

presented in odds ratios (OR) and 95% confidence intervals (CI). Table 9 shows the multivariate analyses, presented in odds ratios (OR) and 95% confidence intervals (CI) of reporting fidelity over the specified time period.

### ***Sample characteristics***

#### *Relationship characteristics*

Nearly half of the respondents in this sample of youth currently in relationships were married (45.34%, see Table 1). Female respondents were substantially more likely to be married than male respondents (58.45% compared with 31.03%,  $p < 0.01$ ). There were no significant sex differences in the level of trust, commitment, perceived level of alternatives, or satisfaction. Female respondents indicated higher levels of investments in their relationships than male respondents (2.97 compared with the mean for males of 2.88 on a scale of 1 to 4,  $p < 0.01$ ). Male respondents were more likely to indicate they were underbenefiting (1.85 compared with the mean for females of 2.09 on a scale of 0 to 3 with 2 being equity,  $p < 0.01$ ). Male respondents indicated a higher level of self-verification by their partners than female respondents (4.35 compared with the mean for females of 4.28 on a scale of 1 to 5,  $p < 0.01$ ).

#### *Self-feelings*

There were no sex differences in feelings of self-esteem, mastery, or depression. However, female respondents indicated higher levels of distress than male respondents (2.40 compared with the mean for males of 2.28 on a scale of 1 to 4,  $p < 0.01$ ).

#### *AIDS specific measures*

Female respondents indicated more positive perceptions of condoms than males (2.33 compared with the mean for males of 2.21 on a scale of 1 to 4,  $p < 0.01$ ). Although

the general level of condom use self-efficacy indicated by respondents was exceptionally low (for comparison see Meekers and Klein 2002), males indicated lower levels of condom use self-efficacy (1.37 compared with the mean for females of 1.94 on a scale of 1 to 4,  $p < 0.01$ ) than female respondents. There were no significant sex differences in the perceived level of emotional support for relationships. Female respondents indicated a greater fidelity self-efficacy than males (2.38 compared with the mean for males of 1.91,  $p < 0.01$ ), yet greater pressure to have sex than males (1.62 compared with the mean for males of 1.52,  $p < 0.05$ ).

There were no significant sex differences in the respondents' knowledge of HIV transmission or the respondents' relative perceived risk of HIV. Male respondents indicated a more internal AIDS prevention locus of control than female respondents (2.51 compared with the mean for females of 2.30,  $p < 0.01$ ).

#### *Levels of condom use*

Few married respondents reported that they used a condom the last time they had sex with their spouse (14.32%). Condom use during the last sex with a non-marital partner was high for married respondents (65.90%). Married male respondents were significantly more likely to report that they used a condom the last time they had sex with a non-marital partner than were married female respondents (74.44% compared with 59.85%,  $p < 0.05$ ). About half (49.78%) of respondents who were not married reported that they used a condom the last time they had sex with their partner. Despite the relatively high levels of condom use the last time the respondents had sex with their non-marital partners, consistency of condom use was relatively low, with only about one in

seven (13.93%) reporting that they use condoms consistently with their non-marital partners.

### *Levels of fidelity*

As would be expected, the percent of respondents who report fidelity decreased with the length of time in question. A large majority of respondents reported that they were faithful in the past month (77.98%), however only two-thirds reported fidelity to one partner in the past year (62.41%) and less than a quarter had been faithful to the same partner since their sexual debut (22.06%). Female respondents were more likely to report being faithful in each time frame (month: 93.02% of married females compared with 56.18% of married males,  $p < 0.01$ ; year: 78.17% compared with 46.41% of males,  $p < 0.01$ ; lifetime: 31.92% compared with 11.28% of males,  $p < 0.01$ ).

### *Determinants of condom use*

#### *Condom use during last sex with a spouse*

The univariate analyses of the determinants of condom use during the last sex with a spouse are shown in the first and second columns of Table 6. Among female respondents, investments and condom use self-efficacy were each associated with a lower likelihood of reporting condom use in the last sex with a spouse in the univariate analyses. When all the variables in the model are included in the analysis, shown in the first column of Table 7, the relationships that investments and condom use self-efficacy had with condom use in the univariate analysis remain and the association between relationship commitment and condom use during last sex with a spouse becomes significant. While we expected that greater investments in a relationship would be associated with lower levels of condom use, our finding that greater commitment among

married women is associated with a higher odds of reporting condom use during the last sex with a husband (OR=6.09,  $p<0.05$ ) is unexpected. Additionally, our finding that the likelihood of reporting condom use during the last sex with a spouse decreased with greater levels of condom use self-efficacy (OR=0.42,  $p<0.01$ ) is also unexpected. The results for male respondents differed from the results for female respondents, with none of the variables related to condom use in last sex with a spouse in the multivariate analyses of males' reports of condom use during last sex with a spouse and only greater feelings of depression associated with a higher odds of condom use in the univariate analysis.

*Table 6 and Table 7 about here*

*Condom use during last sex for respondents who are not married*

The determinants of condom use during the last sex with a non-marital partner for female and male respondents who were not married are shown in the third and fourth columns of Tables 6 and 7. In the univariate analyses, among female respondents, trust in a partner, commitment to a partner, having multiple partners, and greater AIDS prevention knowledge were each associated with an increased likelihood of reporting condom use in the last sex. Positive beliefs about condoms and condom use self-efficacy were each associated with a decreased likelihood of reporting condom use in the last sex with a non-marital partner (Table 6). In the multivariate analysis, shown in the third column of Table 7, greater trust in a partner and reporting multiple partners in the past year were each associated with an increased likelihood of condom use among unmarried young women, while greater condom use self-efficacy was associated with a decreased likelihood of condom use. For each unit increase in unmarried female respondents' trust

in their partner, the likelihood of reporting condom use in last sex increased by 3.55 times (OR=3.55,  $p<0.01$ ) controlling for other variables in the model. Females who reported that they had two or more partners in the past 12 months were nearly three times more likely to report that they used a condom in their last sex than females who reported only one partner in the past year (OR=2.88,  $p<0.05$ ). Female respondents with greater condom use self-efficacy had a lower likelihood of reporting condom use in their last sex (OR=0.32,  $p<0.01$ ), controlling for other variables in the model. Female respondents with greater knowledge of AIDS prevention had a higher likelihood of reporting condom use in their last sex (OR=1.43,  $p<0.05$ ), controlling for other variables in the model.

The determinants of condom use during the last sex with a non-marital partner were different for males than the determinants for females. In the univariate analyses, male respondents with greater condom use self-efficacy had a lower likelihood of reporting condom use in their last sex while a more internal AIDS prevention locus of control was associated with a higher likelihood of reporting condom use in their last sex (Table 6, column 4). In the multivariate analysis shown in Table 7, column 4, only condom use self-efficacy remains statistically significant. Male respondents with greater condom use self-efficacy had a lower odds of reporting condom use in their last sex (OR=0.28,  $p<0.01$ ) controlling for other variables in the model.

#### *Consistent condom use with a non-marital partner*

The determinants of consistent condom use with a non-marital partner are shown in the fifth and sixth columns of Tables 6 and 7. In the univariate analysis for females, commitment to a partner as well as a more internal AIDS prevention locus of control were each associated with a higher likelihood of condom use with a non-marital partner.

However, once all of the other variables are included in the model, some of the variables related to condom use with a non-marital partner change. Each unit increase in investments in female respondents' relationship with their main partner was associated with a decreased likelihood of consistent condom use with a non-marital partner (OR=0.09,  $p<0.01$ ) controlling for other variables in the model. Similarly, females who indicated higher levels of underbenefiting were less likely to report consistent condom use with a non-marital partner (OR=0.00,  $p<0.05$ ). Alternatively, each unit increase in female respondents' commitment to their main partner was associated with an increase in consistent condom use (OR=11.98,  $p<0.05$ ) controlling for other variables in the model. Condom use self-efficacy was associated with a lower likelihood of female respondents reporting consistent condom use (OR=0.29,  $p<0.05$ ) controlling for other variables in the model.

Again, the determinants of consistent condom use with a non-marital partner were different for males than the determinants for females in the multivariate analysis. While married males were nearly three and a half times more likely to report consistent condom use with a non-marital partner than males who were not married (OR=3.42,  $p<0.05$ ) when other variables in the model are controlled, other relationship characteristics were not associated with an increased likelihood of condom use for males. Male respondents who had a more internal AIDS prevention locus of control were more likely to report consistent condom use with a non-marital partner (OR=1.77,  $p<0.05$ ), controlling for other variables in the model. Finally, as with female respondents, male respondents with greater condom use self-efficacy were less likely to report consistent condom use with a non-marital partner (OR=0.25,  $p<0.01$ ), controlling for other variables in the model.

## *Determinants of fidelity*

### *Fidelity in the past month among married males*

The determinants of married male respondents reporting fidelity in the past month are shown in the first column of Table 8 for the univariate analyses and the first column of Table 9 for the multivariate analyses.<sup>46</sup> The univariate analyses show greater commitment and an older age at first sex are each associated with higher odds of reporting fidelity in the past month. Males who reported greater alternatives to their relationship or greater pressure to have sex were less likely to report fidelity in the past month in the univariate analyses. The multivariate analysis suffers from a small sample size. Despite this small sample size, for each unit increase in commitment, there was a substantial increase in the likelihood of male respondents reporting that they were faithful to their wives in the past month (OR=35.52,  $p<0.05$ ).

*Table 8 and Table 9 about here*

### *Fidelity in the past year*

The determinants of female respondents reporting fidelity in the past year are shown in the second and third columns of Tables 8 and 9. The univariate analysis, presented in Table 8, shows that fewer alternatives to the relationship, being married, greater fidelity self-efficacy, lower relationship emotional support, and a higher age at first sex are each associated with higher levels of reported fidelity in the past year among female respondents. Once all of the other variables are included in the model (Table 9), relationship emotional support no longer has a significant relationship with female

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<sup>46</sup> Only respondents who had ever used condoms were asked about their fidelity in the past month. Of the 125 women who answered all the questions in the model, 6 failures and 111 successes are completely determined in the model of female fidelity in the past month. As such, analysis of female fidelity in the past month is not presented.



fidelity in the past year. Among female respondents, each unit increase in indicating potential alternative partners or means of having various needs fulfilled halved the likelihood of reporting fidelity in the past year (OR=0.50,  $p<0.01$ ), once the other variables are included in the model. Female respondents who were married (OR=3.23,  $p<0.01$ ) and female respondents who indicated greater self-efficacy in their ability to remain faithful (OR=1.42,  $p<0.05$ ) had a greater likelihood of reporting fidelity in the past year, controlling for other variables in the model. Each year increase in the age when female respondents first had sex is associated with an increase in the likelihood of reporting fidelity in the past year (OR=1.35,  $p<0.01$ ), controlling for other variables in the model.

In the univariate analysis of reported fidelity in the past year for males, many of the relationship characteristics were associated with fidelity (Table 8). Trust, commitment, and investments in the relationship were each associated with higher levels of fidelity in the past year for male respondents, while perceived alternatives to the relationship were associated with lower levels of fidelity in the univariate analysis. Additionally, in the univariate analysis fidelity self-efficacy and an older age at first sex were associated with higher levels of fidelity among male respondents.

In the multivariate analysis, fewer variables were statistically significant (Table 9). Similar to female respondents, each year increase in the age at first sex is also associated with an increased likelihood of male respondents reporting fidelity in the past year (OR=1.13,  $p<0.05$ ), controlling other variables in the model. Additionally, male respondents indicating greater levels of self-efficacy in their ability to remain faithful

(OR=1.39,  $p<0.05$ ) had a greater likelihood of reporting fidelity in the past year, when other variables in the model are controlled.

### *Lifetime fidelity*

The determinants of female respondents reporting lifetime fidelity to one partner are shown in the fourth column of Table 8 for the univariate analysis and in the fourth column of Table 9 for the multivariate analysis. In the univariate analysis trust and commitment to a partner were each associated with reporting lifetime fidelity, while perceiving greater alternatives to their main relationship was associated with lower levels of lifetime fidelity. Additionally, in the univariate analysis females who indicated a higher level of fidelity self-efficacy, a greater pressure to have sex, or an older age at first sex were more likely to report lifetime fidelity. Once all of the variables were included in the multivariate model, female respondents who were married (OR=2.00,  $p<0.05$ ) or who indicated more self-verification from their main partner (OR=2.42,  $p<0.01$ ) each had a greater likelihood of reporting lifetime fidelity to one partner, controlling for other variables in the model. Females who indicated that they are underbenefiting were less likely to report lifetime fidelity (OR=0.22,  $p<0.05$ ), when other variables in the model are included in the analysis. Additionally, female respondents who indicated greater self-efficacy in their ability to remain faithful (OR=1.29,  $p<0.05$ ) had a greater likelihood of reporting lifetime fidelity to one partner, controlling for other variables in the model. Unexpectedly, female respondents who indicated that there is higher level of pressure to have sex had an increased likelihood of reporting lifetime fidelity than those who indicated lower levels of pressure to have sex (OR=1.61,  $p<0.05$ ), controlling for other variables in the model. A later age at first sex was associated with an increased likelihood

of reporting lifetime fidelity to one partner for female respondents (OR=1.66,  $p<0.01$ ), when other variables in the model are controlled.

The results of the univariate and the multivariate analyses of male respondents reporting lifetime fidelity are quite similar. In the multivariate model (Table 9), male respondents who indicated better potential alternative partners or means of having various needs fulfilled were less likely to report lifetime fidelity to one partner than males reporting lower quality and likelihood of alternatives to their current relationship (OR=0.41,  $p<0.01$ ). Male respondents who indicated a more internal AIDS prevention locus of control were less likely to report lifetime fidelity to one partner than males indicating a more external AIDS prevention locus of control (OR=0.57,  $p<0.05$ ), controlling for other variables in the model. A later age at first sex was associated with an increased likelihood of reporting lifetime fidelity to one partner for male respondents (OR=1.71,  $p<0.01$ ), controlling for other variables in the model.

## ***Discussion***

### *Condom use*

The levels of condom use reported by young Tanzanians in relationships differed by the respondents' partner type. Condom use with a spouse was lower than condom use with any other partner type. There are many reasons that condom use with a spouse would be less likely than condom use with other partners. One of the main reasons for such a low level of condom use with spouses is that sexual behavior in Tanzania is largely organized to ensure procreation. While condoms are effective at preventing the spread of HIV, they also prevent pregnancy. The prevention of pregnancy may be too great a cost for marital partners who are trying to have children yet also looking to

prevent HIV. Unfortunately, we were unable to test the extent to which a desire to have children is a deterrent to condom use because our data contained no measures of the respondents' fertility intentions. While condom use with a spouse was low (14%), married respondents' with extra-marital partners were likely to use condoms with their non-marital partners. Married male respondents were three and a half times more likely to use condoms consistently with non-marital partners than were unmarried males ( $p < 0.05$ ). Married males' higher levels of condom use in extra-marital sex may reflect an effort to prevent bringing HIV into their marriage.

Condom use during the most recent sex was more common among respondents who were not married (50%) than among married respondents in their last sex with a spouse (14%). However, condom use for married respondents in their last extra-marital sex had the highest rates of use (66%). Nonetheless, the level of consistent condom use with non-marital partners—the level of use necessary to prevent HIV transmission (Bracher et al. 2004)—was low. Only 14 percent of youth reported using condoms consistently with their non-marital partners.

As would be expected in a culture valuing marital fertility, especially during the early years of a woman's reproductive years, consistent condom use was not common among married youth. Consistent condom use with a spouse was so infrequent that multivariate analyses could not be conducted. The three respondents who always used condoms with their spouses indicated a lower level of having their identities verified by their spouses that was marginally significant (3.9 compared with 4.3,  $p < 0.10$ ). All three were Christians, aged 20 to 24 who completed primary school. Two of these three respondents were female. It does not appear that the respondent's non-marital sexual

activity is driving consistent condom use with their spouse as each reported a high level of fidelity. All had been faithful to their spouse in the past month and past year. One of the three reported a low HIV risk perception, a second reported a moderate HIV risk perception, and the third did not report her risk perception.

Few determinants of condom use were shared by both sexes. Condom use self-efficacy, which had an unexpected relationship with condom use, was the only determinant of condom use shared by females and males. The relationship between condom use and condom use self-efficacy was in the opposite direction expected. On the whole, levels of condom use self-efficacy were extremely low, with nearly half of respondents (46%) indicating that they have no condom use self-efficacy. The young people interviewed in Mtoni were constantly afraid of their elders finding out that they were sexually active. This fear makes it difficult to buy condoms and unlikely that unmarried youth would carry a condom for fear of being caught with the incriminating evidence of having a condom. This inability to buy and carry condoms is echoed in the quantitative data—approximately 80 percent of youth report that they cannot “always carry a condom” and approximately the same percent of youth report that they cannot “confidently as for a condom in a shop” (not shown). If respondents in more stable relationships were more comfortable carrying and buying condoms at the same time as they were likely to use condoms with their partners, then the negative relationship between condom use and condom use self-efficacy could be driven by relationship stability and the fear of getting caught. While we have no indication of the stability of non-marital relationships, when we compare the condom use self-efficacy of married respondents with the condom use self-efficacy of respondents who are not married, we

find that married respondents have higher condom use self-efficacy. If unmarried respondents who are in more stable relationships also have greater condom use self-efficacy and lower levels of condom use than those in less stable relationships, then we would expect a negative relationship between condom use self-efficacy and actual condom use. Further, condom use self-efficacy measures individuals' perceived ability to use condoms and is not linked to their desire to use condoms. It is possible that individuals might feel that they could use condoms, but lack the motivation to use them. Without the motivation to use condoms, the ability to use them is irrelevant.

While the variables that describe the individual's relationship with their partner were often predictors of condom use for females, these relationship variables were not predictors of condom use for males. This suggests that for females the characteristics of their relationship—frequently in terms of their commitment to their partner and the level of investments in their relationship—might influence condom use, while for males other factors influence use. Although few of the variables were related to condom use for male respondents, the AIDS specific measures such as condom use self-efficacy, AIDS prevention locus of control, and risk perception, were important predictors of consistent condom use with a non-marital partner.

Other than fear of pregnancy, a high HIV risk perception is often found to motivate condom use. We did not find that respondents who believe that they are at higher risk for HIV than most people were more likely to use condoms. This lack of relationship could be due to some condom users reporting that they are of lower risk because of they use condoms for AIDS prevention while other condom users report they are high risk and therefore they use condoms. However, it is also possible young people

recognize that as young people, they generally are in a higher risk category than most people, and their perceived high risk is at the group level instead of the individual level. If identifying as a member of a high risk category is driving the youth's risk perception instead of identifying one's personal level of risk, then risk perception is less likely to be related to condom use.

### *Fidelity*

As would be expected, the percent of respondents who reported fidelity decreased with the length of time in question. Consistent with the notion that female sexuality is more highly regulated than male sexuality, female respondents were more likely to report being faithful in each time of reference. Nonetheless, female infidelity is not negligible: 7 percent of women were not faithful to their husbands in the past month and 22 percent were not faithful to one partner over the past year.

Levels of reported infidelity were relatively high for men, with 44 percent of men reporting that they were not faithful to their wives in the past month and 54 percent of all male respondents currently in relationships reporting that they were not faithful to one partner in the past year.

As with condom use, in our multivariate analyses of fidelity, trust and commitment did not have the relationship with fidelity that was expected. However, our measures of trust and commitment are global measures, not measures specific to sexual relations. Our indicator of trust is whether the respondent feels that they can generally trust their partner. The measure is neither a measure of sexual trust in their partner—which we would expect to be reciprocated—nor is it a measure of the respondent's own trustworthiness. Similarly, our measure of commitment is not a measure of sexual

commitment. However, if we consider an individual's belief that it would be easy for them to remain faithful to their partner even if others expressed sexual interest or an individual's belief that it would not be difficult to be faithful to one person as indicators of either sexual commitment or sexual trustworthiness, then the positive relationship between fidelity self-efficacy and fidelity is an important finding. Each unit increase in fidelity self-efficacy was associated with a 30 to 40 percent increase in the odds of reporting fidelity.

Consistent with our hypothesis, respondents who indicated more potential alternative partners or means of having various needs fulfilled reported lower levels of fidelity. While the direction of this relationship is consistent with our hypothesis in each model of fidelity, the relationship is only statistically significant for female fidelity in the past year and male lifetime fidelity.

Of particular interest to AIDS prevention program planners, a delayed sexual debut is associated not only with lifetime fidelity, but also with fidelity in the past year. As 89 percent of the youth in our sample reported that they have been sexually active for two or more years (not shown), most youth have had a full year since their sexual debut during which time they could have had more than one partner. It is possible a delayed sexual debut sets youth on a path of greater fidelity to their partners.

Alternatively, unobserved factors may influence both age at first sex and fidelity after sexual debut. If age at sexual debut has a direct relationship with fidelity then increasing age at first sex should increase fidelity. However, if unobserved factors, such as risk-taking or alcohol consumption, influence both age at first sex and their subsequent fidelity then it is critical for AIDS prevention programs to identify these factors and



design programs targeted at increasing them. Further, targeting shared determinants would involve a more holistic approach to improving reproductive health that is relevant over the entire course of individuals' sexual lives, thus increasing the reach of the messages at the same time as the messages target two methods of prevention.

## **CHAPTER 8: CONCLUSIONS**

Sexually active Tanzanians have two ways to avoid HIV infection: long-term fidelity with an uninfected partner or consistent condom use. Despite the notion that marriage protects spouses from HIV, in urban areas of Tanzania 12 percent of married couples are discordant (Tanzania Commission for AIDS (TACAIDS) et al. 2005). Further, we found 7 percent of young women and 44 percent of young men reported they were not faithful to their spouses in the past month in Tanzania. Consistent condom use among the youth interviewed was inadequate to prevent HIV infection, with only 14 percent of the youth surveyed consistently using condoms with their non-marital partners and less than 1 percent using condoms consistently with their spouses.

This dissertation aimed to understand how individuals develop trusting and committed relationships in a context where doing so involves managing substantial risk. The youth in Mtoni are not representative of all Tanzanian youth. However, if we assume that they may speak for some youth in Tanzania, when we take the quantitative analysis and qualitative analysis together, this research sheds some light on how young Tanzanians develop trusting and committed relationships.

Our first goal was to investigate how trust and commitment develop in the relationships of the young residents of Mtoni, Dar es Salaam through the youth's narratives. The youth appeared to place an important value on satisfaction with their relationship and having their partners understand them. Additionally, the youth in Mtoni often found it difficult to clearly differentiate trust from commitment and trust and commitment from fidelity. Sexual fidelity was highly valued by the youth. Additionally,

as their relationships progressed, being able to rely on their partners for instrumental and emotional support was important to the youth.

The second goal was to test social psychological theories of the development of trust and commitment through path analysis conducted with the survey data. While all of the concepts used in the three theories tested were discussed by the youth in Mtoni, there was great variability in how well the hypothesized relationships between the concepts were found in the data from the PSI/Tanzania TRaC survey. We found the equity theory path models operated differently for males and females. The equity theory path model for females did not fit the data. Among males, although the equity theory path model fit the data, we did not find the hypothesized relationships among the variables. Investment theory, the second theory tested, did not explain the development of commitment among Tanzanian youth. According to investment theory the central factor influencing the development of commitment is investments in the relationship. We failed to find a statistically significant relationship between investments in a relationship and commitment. Identity theory, however, may accurately explain the development of trust and commitment among Tanzanian youth. The associations between the variables in the data are consistent with the theory that self-verification by a partner leads to positive self-feelings and trust in the partner and, ultimately, greater commitment to the partner.

The third goal of this research was to test the relationships trust and commitment have with condom use and fidelity. Analysis of the in-depth interviews with the youth in Mtoni suggested sexual fidelity, trust, and commitment are important to stable relationships yet once sexual fidelity, trust, and commitment are established a couple is unlikely to use condoms. However, in the quantitative data the associations expected

between the variables were not clearly evident. While a generalized trust in one's partner was hypothesized to reduce the feelings of risk, a more specific sexual trust could be the important element of trust related to condom use. Similarly, we did not find a general trust in a partner or a general feeling of commitment to be related to fidelity. Nonetheless, if we consider fidelity self-efficacy to be an indicator of sexual commitment, then we cannot exclude the possibility that commitment is an important factor in remaining faithful to a partner.

### *Future Articles*

A variety of papers may be written based on this dissertation research. A first paper based on this research may focus on how self-verification by a partner can lead to stable relationships. The qualitative interviews in Mtoni can shed light on the youth's descriptions of how the positive feedback that they receive from their partners leads to positive self-feelings, trust, and commitment. In addition to the qualitative descriptions from the youth in Mtoni, the path analysis of identity theory provides a test of the relationship between self-verification, self-feelings, trust, and commitment.

While there were many similarities in how the youth in Mtoni's relationships developed, there were some important outliers and differences. A second paper based on this dissertation research may focus on the relationship narratives provided by a few of the couples interviewed in Mtoni. Rich descriptions of a few couples, including descriptions and comparisons of how the young man and young woman each described their relationship would provide insight into the various paths to stable relationships and the paths to the dissolution of relationships in Mtoni. Couples to be included in this analysis include: the couples with an arranged marriage, the couple that broke-up

between interviews, the couple with a premarital pregnancy where the father denied paternity, the couple who hid their relationship but became engaged between interviews, and the couple who were open with their families and became engaged between interviews.

A third paper based on this dissertation research might focus on the predictors of abstinence, the predictors of fidelity, and the predictors of condom use among youth in Tanzania. As HIV prevention in Tanzania focuses on the promotion of abstinence, fidelity, and condom use, an analysis of the predictors of each behavior may provide useful programmatic information. The in-depth interviews as well as the survey data will be used to explore these different AIDS prevention behaviors.

As the youth in Mtoni focused on condom use for pregnancy prevention instead of AIDS prevention, the youth's fear of hormonal contraception and their motivations for using condoms must be better understood in order for condom promotion programs to better target youth for AIDS prevention.

Additional papers based on this dissertation research might focus on the role of peers in youth's understanding and management of their sexuality or on socioeconomic status and educational attainment are related to youth's self-feelings.

### ***Summary of Findings***

There is valid concern about using Western theories in the African context. However, this analysis contributes to the growing body of literature that shows that once a theory developed in a western country is adapted to the local context, the theory can offer insight into behavior among individuals living in sub-Saharan Africa. Additionally,

testing these theories in different cultures may point to nuances in the theories that would have been missed if the analysis of the theories remained isolated to one cultural context.

The analysis of the in-depth interviews among youth in Mtoni describes the youth's understandings of how trust and commitment develop and how satisfaction with their relationship and having their partners understand them are important to the development of relationships in Mtoni. The youth in Mtoni found it difficult to distinctly differentiate between concepts such as trust, commitment, and fidelity. It appears the youth feel that ideal relationships have trust, commitment, and fidelity. Many of the youth explained that fidelity was a basic expectation that partners have for each other. Beyond sexual fidelity, being able to trust and rely on a partner was important for relationship development. The youth appear to receive substantial instrumental and emotional support through their relationships.

A strong patriarchal tradition was evident in the discussions with the youth in Mtoni. Although many of the young women were still in school and hoped for careers, nearly all of the youth anticipated a clear gendered division of labor once they are married. On the most basic level, men were expected to provide for their families and women were expected to bear children and assume responsibility for the housework. The youth's descriptions of these gendered expectations often pointed to the constraints these expectations imposed on their relationships. Men could not marry their partners until they became financially secure and women who did not bear children risked divorce. In an environment where economic hardship and unemployment are common, men's economic instability may be as difficult to contend with as infertility.

The youth's relationships in Mtoni were further constrained by the fear of being discovered by their elders. The youth described that it was more important for young women to keep their relationships hidden than for young men. Both the young men and the young women felt peer pressure to be in relationships, yet the young men had more freedom to discuss their relationships in public spaces.

The conversations with the youth in Mtoni revealed the extent to which the youth rely on their families and partners to meet their basic needs. While the youth's descriptions of their relationships suggest ample cooperation between partners, some youth were concerned their partner would attempt to maximize their benefits from the relationship or to deceive them. The main elements of the theories applied in the path analysis—support, cooperation, maximization of benefits, and the feelings associated with these interactions—were salient to the youth in Mtoni.

While the youth did not describe their relationships in a pure exchange framework, they often described exchanging material goods, services, and emotion with their partners. Consistent with Leik and Leik's (1977) model of interpersonal commitment, the youth described how their interactions and exchanges of material goods, advice, and emotions led to feelings for their partner. Feeling that they could rely on their partner and that their partner truly knew them appeared to be particularly important. When we asked why they chose their partner instead of any of the other potential partners in the area, some of the youth explained alternative partners did not compare favorably, frequently in terms of their *tabia*. Other youth simply explained that their partner was the only person for them.

While all of the youth interviewed were in relationships, few were in the type of relationships that Leik and Leik would have described as a strict exchange. Youth in less committed relationships may have been less likely to agree to participate in our project. Most of the youth's relationships could be classified as at the level that Leik and Leik referred to as confidence. Nearly all of the youth explained that they had begun to trust their partner, but did not yet trust them completely. The youth discussed being able to weather obstacles, such as time apart, because they looked to the long-term prospects for their relationship. Although few of the youth were married, nearly all of the youth explained that marriage was the ultimate form of commitment. Despite the possibility of divorce and polygamy, the youth in Mtoni often invoked images of marriage as being committed to one person forever, regardless of difficulties or illness.

While Leik and Leik's model of exchange relationships allows for relationships to progress to each stage, the youth rarely discussed relationships that were once a strict exchange progressing to confidence or commitment. The few relationships that could be thought of as strict exchanges were all past relationships and were never discussed as having had the potential to progress towards a relationship of confidence. However, the youth might have hidden that their current relationship was previously less committed out of respect for their partner and what their relationship has become.

Despite the clear gendered division of labor and a norm of men having more power than women in relationships, the youth in Mtoni explained that a woman could have more power in her relationship if she knew that her boyfriend or husband loved her more than she loved him. The male youth explained that they did not want to be *Bushoke*, the name of a popular local singer who sings to his wife that he will give her whatever



she wants to prevent her from leaving. The young men explained that if their partners knew how much they loved them, then the young women would make the young men do everything, including the housework.

The two theories from the social exchange framework tested in the path analysis were equity theory and investment theory. Equity theory posits that inequity in contributions between partners leads to distress and subsequently to lower satisfaction and commitment (Walster (Hatfield) et al. 1978; Sprecher 2001). The first finding from our analysis of equity theory was that the path models for females and males were not equivalent. The relationships between the variables were not the same for females as they were for males. In fact, the equity theory model did not fit the data for females. This suggests that young women in Tanzania's perceptions of the equity of their contributions and rewards as compared with their partner's contributions and rewards may not be related to their feelings of distress and subsequent feelings of satisfaction with their relationships, or their commitment to their relationships.

Among males, the data-model fit for the equity model was acceptable. However, in the path model, overbenefiting was associated with lower levels of distress among males. In a relatively poor context receiving greater benefit might have tangible benefits that lower exposure to stressors. Nonetheless, consistent with equity theory, greater distress among males was associated with lower levels of relationship commitment.

The extent to which the poor data-model fit for the equity theory model for females is unique to these data should be tested. It is possible the strict gender roles in Tanzania change the relationship between inequity, distress, and commitment for females. A future area of research for equity theory may be to test the influence of gender

roles and gender specific emotion rules on the feeling of distress. If strict gender roles suppress feelings of distress or the consequences of distress then we would expect to find an indicator of adherence to strict gender norms to be an indicator of data-model fit in diverse cultural contexts. An additional area of research for equity theory may be to test the influence of poverty on the relationship between inequity and distress. If in poorer contexts overbenefiting leads to tangible benefits that lower exposure to stressors, we would expect poverty to influence the relationship between overbenefiting and distress. Future research should explore this possibility.

The second theory based in the social exchange framework tested in the path analysis was investment theory. According to investment theory, satisfaction and the availability of alternatives do not sufficiently explain commitment without taking into account the level of investments that an individual has made in the relationship (Rusbult et al. 1998). We found that although greater alternatives were associated with lower levels of commitment and greater satisfaction was associated with higher levels of commitment, an individual's level of investment in the relationship was not associated with commitment. Future research should seek to understand why investments in a relationship are important predictors of relationship commitment in studies conducted in the U.S., yet were not significant predictors of relationship commitment among youth in Tanzania.

The identity theory model appears to be one of the possible theoretical models to represent the development of trust and commitment among young adults in Tanzania. As previously discussed, there are a number of strengths in using Burke's identity theory to guide the analysis of trust and commitment. The identity theory model explicitly brings

emotion into the development of trust and commitment in relationships. Previous research used each partner's report of what level of activity they think is appropriate for the specific individual's activity in an arena. Based on Burke and Stets' recommendations (1999), self-verification was measured by determining the level of agreement between the degree that the respondent feels that they should engage in a partner role activity and the degree that they think that their partner thinks that they should engage in that partner role activity. This measure more accurately gages the agreement between the individual's identity standard and their perception of the input from their partner.

In addition, although Burke and Stets (1999) measured self-verification of instrumental activities, we followed their suggestion to include activities such as providing emotional support. We added to Burke and Stets' list of activities various responsibilities including showing appreciation for the things the partner does well, giving the partner affection, helping with the partner's problems, looking out for each other/anticipating the other's needs, and spending time relaxing with the partner.

None of the three theoretical models account for the external constraints individuals face in satisfying their partner's needs and performing partner role activities. Nonetheless, bivariate analysis of the survey data suggests respondents who are of low socioeconomic status are no less likely to verify their partner's "financial provider" identity than those of high socioeconomic status (not shown). Further, the only area of self-verification significantly associated with socioeconomic status is helping a partner with their problems, with respondents of low socioeconomic status reporting greater self-verification.

Although most research focuses on male infidelity and men's need for multiple partners, the youth in Mtoni described many reasons why women might be unfaithful. Hollos and Larsen (2008) suggested that among women in Moshi, Tanzania it is to some extent acceptable for women to seek another partner if they have difficulties conceiving with their husband. Our discussions with the youth in Mtoni suggest Hollos and Larsen's findings apply in Dar es Salaam. Further, because this study directly investigated infidelity, we found additional ideas about women's infidelity, including that infidelity is driven by a lack of satisfaction with a partner's provision of various needs, including sex and passion, financial security, and general help. Although many of the young women knew the clichés describing women's need for multiple partners, often the young men had not heard these expressions and, if they had heard one of the expressions, they often did not know what the expression meant.

Much of the research on social exchange focuses on the importance of reciprocity in exchange relationships. The exchange of trust is no exception. Each time partners have the opportunity to behave in an untrustworthy manner yet do not, they increase the trust that they have for each other and the risks they are willing to take with each other. Relationships without explicitly negotiated transactions tend to have higher levels of trust (Molm 2000). Alternatively, exchange partners are able to create assurances when an incentive structure encourages benign behavior on the part of both partners (Molm 2000).

During the in-depth interviews in Mtoni, the youth often explained that they remind their partners of the consequences of breaking their trust. When the youth in Mtoni agree to begin a relationship, most tell each other they expect the other to be faithful and explain that the relationship would end if they discover the other's infidelity.

They often talked with each other about the need to be faithful to stay safe from diseases. These conversations have the potential to create an incentive structure to encourage benign behavior: youth know that if they are unfaithful then they risk disease and their relationship ending. However, many of the youth explained that in practice if a partner violates the expectation of fidelity then the other partner would either end their relationship or decide to find their own additional partners. The youth in Mtoni explained they often remind each other to be faithful. In practice, these reminders do not appear to be linked to a concern that their partner would forget to be faithful, but seem to be more of a ritualized parting remark.

The youth's descriptions of women going to the elders if her husband is not faithful stands in contrast with the idea that the traditional sexual norms are permissive of male promiscuity. On the other hand, the elders may have always been a source of assurance of marital fidelity if we consider that traditionally the elders might insist a man marry a woman with whom he has had sex in order to legitimize their sexual behavior. Alternatively, with the decline in formal polygamy and increased risk of HIV, elders filling the role as enforcers of fidelity might be a new phenomenon.

The levels of reported infidelity were not negligible among the young married Tanzanians interviewed in the national survey. Approximately 7 percent of young Tanzanian women and 44 percent of young Tanzanian men were not faithful to their spouses in the past month. Among all youth in our national sample, 22 percent of young women and 54 percent of young men reported that they had two or more partners in the past year. While it is not surprising that more youth reported having two or more partners when the timeframe is longer, the relationship between having multiple partners and the

length of time in question suggests many of the individuals who have multiple partners are likely to do so over any time frame. A year is 12 times longer than a month, yet the percent of youth reporting more than one partner in the past year was only three times higher than having more than one partner in the past month among women. Among men the length of the timeframe in reference appears to have an even weaker influence on reporting multiple partners, with having more than one partner in the past year only 22 percent higher than having more than one partner in the past month.

Condom use to prevent pregnancy appears to overshadow condom use for disease prevention for the youth in Mtoni. This stands in contrast with the international construction of condoms primarily for disease prevention, yet with the additional benefit of preventing pregnancy. Most of the young women in Mtoni who knew of hormonal contraception were afraid that it would make them infertile, one of the worst conditions that a Tanzanian woman could face. With hormonal contraception effectively eliminated as an option and considerable stigma—if not jail time—associated with a premarital pregnancy, condom use was relatively common among the unmarried youth in Mtoni. Consistent use—use with every partner from start to finish—is necessary for AIDS prevention (Ahmed et al. 2001; Bracher, Santow, and Watkins 2004) but not for pregnancy prevention. It appears that some youth in Mtoni who use condoms are using them to simulate periodic abstinence. While youth's view of condoms as instrumental in preventing pregnancy allows them to negotiate condom use more easily, condom use may be confined to times when, or partners with whom, a pregnancy would be catastrophic. It remains uncertain whether condom use for pregnancy prevention is maintained once partners begin to trust each other's fidelity. Further, if condoms are only negotiated and

used to simulate periodic abstinence or prevent pregnancy, then consistent use is not as important as it would be if condoms were being used for preventing HIV. While unmarried youth are highly motivated to use condoms to prevent pregnancy, therefore increasing the overall use of condoms, the pattern of use needed to prevent pregnancy is insufficient to prevent HIV infection.

Studies on the determinants of condom use tend to focus on the disease prevention properties of condoms to understand why they are used. However, only including the disease prevention motivations for condom use likely leaves us with an unclear picture of condom use, especially in an environment where the fear of hormonal contraception motivates condom use for pregnancy prevention. In contrast, individuals in stable relationships may no longer have strong motivation to use condoms to avoid pregnancy. This decreased motivation to use condoms to prevent pregnancy may be concurrently timed with a decreased motivation to use condoms for AIDS prevention or may occur at a different time. The challenge for AIDS prevention programs is to increase the consistency of condom use and sustain condom use beyond when premarital pregnancy transitions from disastrous to acceptable. The motivation behind condom use needs to be transformed from primarily pregnancy prevention, to pregnancy prevention and AIDS prevention without additionally stigmatizing condom use.

In the multivariate analyses, trust and commitment did not have the relationships with condom use and fidelity as were expected. This finding is in contrast with the discussions during the in-depth interviews in Mtoni. The youth in Mtoni often discussed using condoms when they do not trust their partners and stopping condom use once they trust their partners. However, when the youth in Mtoni referred to not using condoms

because they trust their partner, they frequently referred to trusting their partner's sexual fidelity and not the general notion of trust used in the quantitative analysis.

However, if we take the youth in Mtoni's notion that marriage is the ultimate sign of commitment among young couples, then our finding in the TRaC national survey that condom use was lower in marital sex than non-marital sex suggests some role for commitment as a barrier to condom use. Similarly, married females were more likely to report only one partner than females who were not married. A certain level of trust and commitment may have been necessary for the youth interviewed in the TRaC survey to disclose that they had a partner. If this were the case, then there would be a basic level of trust and commitment in each of the relationships reported in the survey. Once this basic level exists then the effect of trust and commitment may plateau and which would lead to there being no difference in condom use or fidelity by level of trust or commitment among the youth who reported having a partner. There being a basic level of trust and commitment required for youth to disclose their relationship is consistent with the difficulties we initially had finding youth in Mtoni who were willing to discuss their relationships and give us their partner's contact information. Further, as the youth in Mtoni explained, they often had some idea of their partner's trustworthiness and commitment to a potential relationship before they became sexually active with that partner.

### ***Limitations***

Many of the measures used in this analysis include questions that have not previously been used in this population. As such, we are not surprised that confirmatory factor analysis (CFA) of our measurement models failed to have adequate data model-fit



(not shown). Muthen suggests that the CFA may not have adequate data model-fit when first used in a population (Muthen 2007). Muthen suggests five steps for instrument development to increase the validity of the measures. He suggests a first small pilot study analyzed using exploratory factor analysis (EFA) followed by a second small pilot study after revisions of the measures. With data from this second pilot study EFA is conducted again and a tentative CFA model can be tested. A third pilot study should be conducted with a larger sample size. If this larger sample is split, then EFA can be conducted on the first half of the sample and the refined CFA model can be tested with the second half of the sample. It is not until after refining the measures over the course of three pilot studies that Muthen suggests conducting a large-scale study and expecting the data to fit the measurement model. Once the measurement works in one population, Muthen suggests that you can start to test how well it works in different populations. Future work on trust and commitment will benefit from this first study, but should allow for more pilot studies and refinement of measures than were feasible for this study.

*Limitations of the qualitative study of youth's perceptions of their relationships*

The study design for the in-depth interviews targeted youth aged 15 to 24. In practice, the age restriction limited the extent to which this study is representative of the relationships had by young people aged 15 to 24. Many of the young women we approached to interview had partners who were older than 24 years old, and because we did not have IRB approval to interview these older partners we did not interview these couples. The couples we interviewed tended to be those who were in relationships with others in the neighborhood, be closer in age than other couples, and were less likely to be married. The youth we talked with told us that those who leave for work tend to be in

relationships with people outside of Mtoni, tended to have larger age differences between partners, and seem to make more money.

Talking to only those youth in Mtoni who were willing to discuss their relationships limited the type of relationships for which we have descriptions. Only two respondents told us about their casual relationships, all of which they framed as in the past. Only a few males mentioned casual relationships and when they discussed these relationships they frequently did not elaborate the details of their relationships. While casual relationships may simply lack the relationship characteristics elicited in these interviews—such as investments in the relationship—other relationship characteristics or characteristics of potential casual partners may be important not only in finding a casual partner, but also potentially in how casual partners transition into more stable partners. Similarly, none of the youth discussed casual relationships becoming more stable. While this may suggest youth divide partners into two categories—those with whom casual relationships are appropriate and those with whom long term relationships are appropriate—it is possible the youth interviewed did not discuss a more casual period of their currently stable relationships out of respect for their partners and what their relationship has become.

Further, two of the youth who did not want to talk with us during the second round of interviews were in relationships that had ended. Despite having seen evidence that Salama and Jalali were breaking up, Salama told us that their relationship was fine. This suggests that the level of happiness that the youth expressed to us may be inflated by the youth's preference not to discuss the negative aspects of their relationships. The second couple actually broke up after we interviewed the male partner for the second

time and while we were trying to relocate his girlfriend. While he gave some indications that there were problems in their relationship, the breakup unfolded over the next week as we tried to locate her for an interview. After they broke-up, she informed him that she did not want to talk with us again and sent him away.

We were challenged to get details from the youth. Often the youth would respond with words like “good” and “things.” During the second round of interviews my second translator, Melinda, and I brainstormed how to get them to “open up” with us. Melinda offered the type of Swahili words that she uses when she chats with her friends. This concerted effort improved the youth’s descriptions, but there were still some who simply were not very open.

The youth we interviewed in Mtoni were neither representative of Dar es Salaam nor Tanzania. On the whole, the youth we interviewed were poorer than most residents of Dar es Salaam, yet had access to more resources, such as electricity and running water, than most residents of Tanzania. The youth were constrained by the high rate of unemployment in the formal economy, which impacted their union formation in ways that rural youth who are not involved in the formal economy may not face.

Further, 77 percent of Tanzanians lived in rural areas in 2002 (National Bureau of Statistics 2002). Our urban sample is a select group of Tanzanian youth who may differ substantially from the majority of Tanzanian youth. Unfortunately, the number of urban respondents in the nationally representative survey was not large enough to stratify the analysis by rural and urban residence.

*Limitations of the path analysis of the development of trust and commitment*

A weakness of identity theory relevant to this dissertation is that the model assumes that each identity to be verified is high in salience and prominence. If the identities for which self-verification was measured were too low in salience or prominence, then we would expect for self-verification to have no effect on self-feelings, trust, or commitment. However, as self-verification was associated with self-feelings and marginally associated with trust (at the  $p < 0.10$  level) this potential weakness of the theory did not emerge.

Another weakness of social exchange theory and identity theory face is related to proving causality. As previously discussed, while negative emotions emerge from failure to verify one's identity or feeling that the relationship is inequitable, the failed self-verification and feelings of inequity may be due to preexisting low levels of commitment. Future research should collect longitudinal data to begin to disentangle the role of preexisting levels of commitment.

We cannot ignore the possibility that measurement error in our distress module explains the unexpected relationship between overbenefiting and distress as well as the poor data-model fit in the identity model when distress is the negative self-feeling considered. In translating the distress module, we found it difficult to find a word in Swahili that captured the notion of distress. We initially tried translating a definition of distress, "worried, anxious, or sad," but there is no negative word for "anxious" and the Swahili word for "worried" is the same word as is used for "scared." A literal translation is "...How worried/scared or sad do you feel about each area that I mention" instead of "...estimate your current level of distress in some areas of your life." It is possible that this translation did not capture the essence of distress.

Further, the lack of words to describe “distress” in Swahili may have important consequences for how the experience of distress is socially defined. The identification and labeling of distress as well as learning the emotional display and internal sensations of distress may be substantively different when words do not exist to describe the emotion. Emotional socialization related to distress, the labeling and recall of distress, and the consequences of distress may be constrained for Swahili speakers. In such circumstances, theoretical models positing a role for distress may be less applicable.

*Limitations of the analysis of condom use and fidelity*

The analysis of condom use and fidelity is limited by the design of the questionnaire. While no questionnaire can overcome the obstacle of relying on an individuals’ reports of their sexual behavior, the questionnaire used in the household survey included many changes from the questionnaire used in previous years and was administered for the first time using a PDA (Personal Digital Assistant/hand held computer). The use of the PDA, while eliminating some interviewer errors, allowed for some errors in the PDA program that had not been discovered and resolved prior to the administration of the survey. One such error is a skip error where only married respondents who had ever used condoms were asked about their fidelity in the past month.

Additionally, PSI/Tanzania is a non-profit organization that implements social marketing programs with donor funding. PSI is adapting to new reporting requirements, such as the need to calculate disability adjusted life years (DALYs) to estimate the impact of the social marketing products. As such, the standard questionnaire is changing and errors have yet to be fully resolved. While the need to adapt to new measurement

standards creates errors in the short term, over the long term these changes will improve the quality of the data collected. For example, while there were substantial gaps in the measurement of fidelity in the 2007 Tanzania TRaC questionnaire, PSI has recently adopted more comprehensive measures of fidelity, including both direct and indirect measures. The measure of fidelity in the past year used in this analysis overestimates infidelity in that respondents who have been monogamous with sequential partners over each period of reference are classified as not having been faithful to one partner. Future studies will greatly benefit from this more comprehensive measurement of fidelity.

The 2007 Tanzania TRaC questionnaire only measured youth's perceived availability of the PSI social marketing condom brand, Salama. Perceived availability of Salama is an important determinant of use of Salama condoms, but not a useful measure for determining overall use of condoms. While Salama is widely known throughout Tanzania, it is not the only condom brand in the country and therefore perceived availability of Salama was not included in this analysis. Further, as reproductive health program increasingly focus on AIDS prevention, measures of fertility intentions often are removed in the interest of not allowing the questionnaire to become too lengthy. However, the in-depth interviews from Mtoni suggest that youth may consider condoms' role in preventing pregnancy equal to, if not greater, than their role in preventing HIV. Additionally, a first birth with a partner may be an important turning point in the relationship and is likely to influence the level of trust and commitment to the relationship. As such, measures of youth's intentions to prevent pregnancy should be included in order to capture a clearer picture of condom use among youth in Tanzania.

Behavioral research related to AIDS prevention is extremely complicated and not behaving in a manner that would prevent AIDS might be stigmatized. Broadly speaking we must acknowledge the possibility the individuals from certain groups or with certain characteristics are reporting condom use and fidelity at higher rates because there is greater social desirability bias for them to report the behavior than for others to report it.

***Recommendations for future data collection***

Future studies on the relationship between trust, commitment, fidelity, and condom use would benefit from a longitudinal study design. A longitudinal study, with frequent contacts with the participants, would allow for a more accurate description of relationship development, evolution, and termination. The youth in Mtoni appeared hesitant to describe past relationships, however, some of the youth whose relationships ended between the two rounds of interviews were willing to explain their break ups. Additionally, a longitudinal study would be helpful to begin to assess the extent to which the temporal ordering hypothesized by the theories fits the data. Further, the multiple pre-tests suggested by Muthen to improve the measurement of the theoretical constructs could be incorporated in the first few rounds of a longitudinal study. Nonetheless, longitudinal studies often suffer from problems of attrition and will likely suffer from greater attrition when the participant's relationship has ended.

Future studies should include more comprehensive measures of fidelity and more comprehensive relationship histories. Direct and indirect measures of fidelity, taken from self-reported fidelity and relationship histories, would provide a clearer picture of fidelity than was possible given the data in this analysis. The timing of changes in relationships, such as the commencement of cohabitation and childbearing, should be recorded to

assess the impact of these changes on trust and commitment. Additionally, future studies should include the global measures of trust and commitment included in this analysis as well as measures of trust and commitment that are specific to sexual relations.

This study benefited greatly from pairing qualitative research with quantitative research. Future studies should continue to capitalize on the synergy between these two methods of inquiry. However, a larger sample size for the household survey would allow for the researcher to stratify the analysis by variables other than sex and relationship type. A more expansive qualitative design would ideally include a research site in a rural area in addition to a research site in an urban area. Further, future qualitative studies should target youth aged 15 to 24 and their partners, regardless of the partner's age. This would allow for few restrictions on the generalizability of the findings by not limiting the type of youth who are interviewed to those who have partners who are also aged 15 to 24.

### ***Program and policy implications***

Operating in a system where family members only meet boyfriends or girlfriends when the youth are seeking permission to get married, youth often lack the guidance and the perspective of their parents in navigating their relationships in their early stages. Many of the youth in Mtoni explained they would like to tell their parents about their relationships before they are engaged, but they fear their parents would think they were misbehaving for being in relationships. Sensitizing parents to the fact youth must have relationships in order to find the person that they will eventually marry may allow youth to receive some of the guidance and enforceable trust that currently is only reserved for marital relationships.



Closely tied to youth's need to hide their relationships from elders and parents, youth appear to have difficulties obtaining condoms. Condom use self-efficacy was extremely low. Youth appear afraid that if they are caught buying or carrying condoms, elders will think they are sexually promiscuous and have bad tabia. An interpersonal communications campaign aimed to sensitize the elders to changes in how youth find their future spouses should make it easier for youth to talk with their elders about their relationships as well as make it easier for youth to obtain condoms without the fear that they will be stigmatized for having condoms.

Many of the youth in Mtoni discussed their desire to marry and build a family. The youth appear to have a strong desire to no longer be a burden on their parents, however the rate of unemployment and under employment make marriage and supporting a family difficult. These conditions lead young men and women to spend more time unmarried and without the enforceable trust that they desire. Job creation would enable youth to marry and build their families. Further, most youth cited poverty and unemployment as reasons both young men and young women seek multiple partners.

We suggest skills-based employment programs for Mtoni, and other areas near tourist centers, that emphasize learning English. Some of the youth who did not pass their school exams were in technical school. The ability to speak English would greatly increase the job opportunities available to local youth and would be a step towards moving the youth in from the margins of the Tanzanian economy. As Tanzania's tourism sector increases, the number of high-quality jobs available in the tourist service sector will also increase and the youth would be well positioned to take advantage of these changes.

### ***Importance of this research***

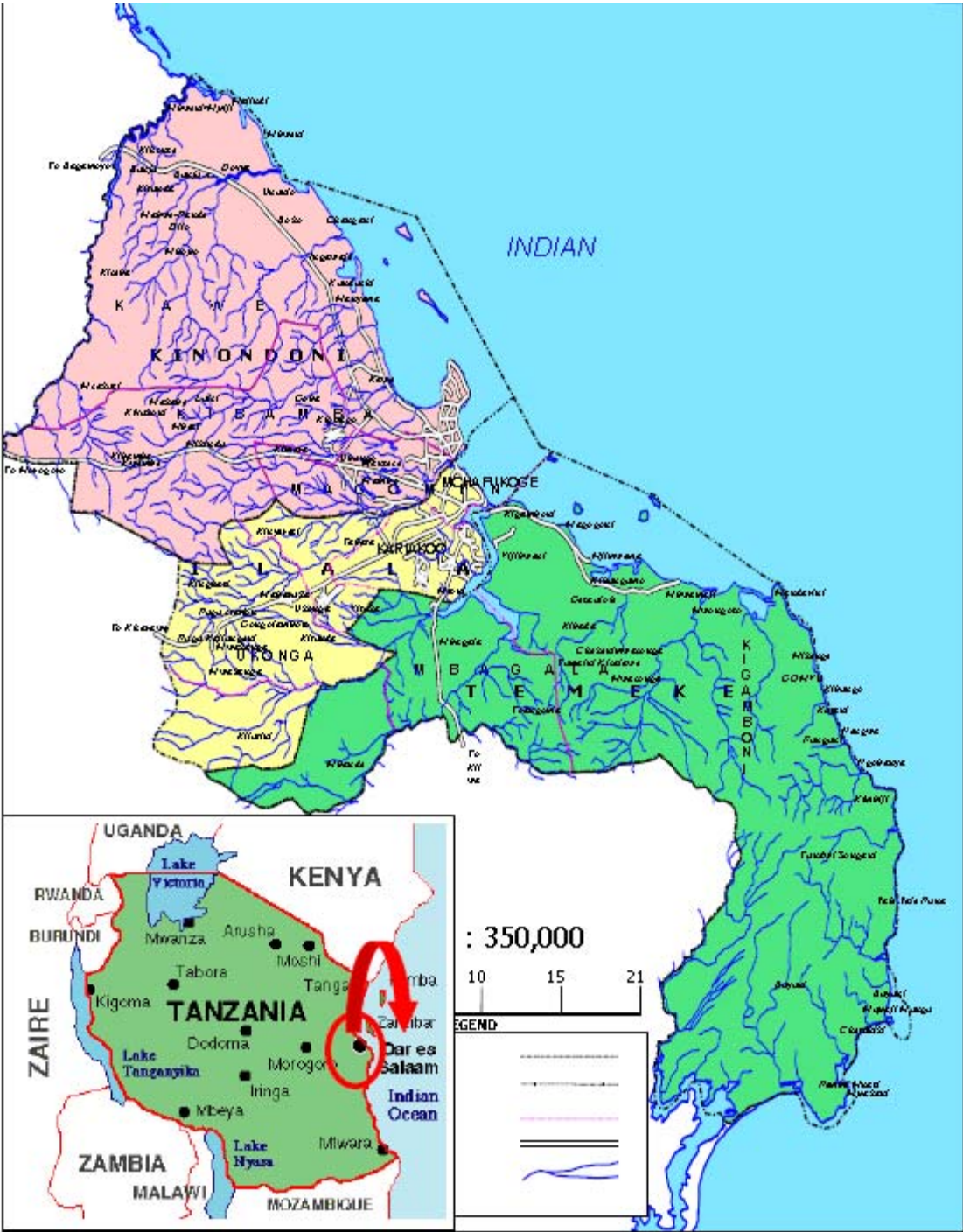
This dissertation aimed to contribute to the understanding of trust and commitment between partners in Tanzania. We examined the development of trust and commitment using multiple theories and combining qualitative with quantitative methods. Subsequently, we examined the relationship that trust and commitment have with fidelity and condom use. This research contributes to the body of literature showing that western theories, when adapted to the local context, can be useful in describing behavior in a non-western context. All of the concepts in the theories tested were discussed by the youth in Mtoni, although the extent to which the hypothesized relationships between the concepts were found in the data varied substantially. Identity theory may offer an accurate explanation of the development of trust and commitment among Tanzanian youth.

Analysis of the in-depth interviews with the youth in Mtoni suggested that sexual fidelity, trust, and commitment are important to stable relationships among youth. Further, the youth in Mtoni explained that once sexual fidelity, trust, and commitment are established a couple is unlikely to use condoms. However, the associations expected between the variables were not clearly evident in the quantitative data. A generalized trust in one's partner was not found to be associated with a lower level of condom use. Similarly, we did not find that general trust in a partner or a general feeling of commitment was related to fidelity.

Many questions remain about the relationships between trust, commitment, fidelity, and condom use. The first remaining question pertains to the role that sexual trust and sexual commitment have in the decision to use condoms or be faithful. Second,

the impact that changes in a relationship—such as marriage, coresidence, and the onset of childbearing—have on trust and commitment have yet to be fully assessed. Finally, as the youth in Mtoni explained, there have been substantial changes in union formation. It remains to be seen how the relationships of youth who have experienced these changes will differ from the relationships formed under the previous norms of union formation in terms of trust, commitment, fidelity, and condom use.

Appendix A: Map of Dar es Salaam, Tanzania



(Source: Dar es Salaam City Council. DAR ES SALAAM CITY PROFILE. November 2004)

## Appendix B: Tables

Table 1: Percentage and frequency distributions of sociodemographic characteristics, condom use, fidelity, relationship characteristics, self-feelings, and AIDS specific measures by sex for respondents aged 15 to 24 who were in relationships and sexually experienced in Tanzania in 2007

	Total	N	Female	N	Males	N
<b>Sex</b>						
Female	52.21	426				
Male	47.79	390				
<b>Age</b>						
15 to 19	28.55	233	27.70	118	29.49	115
20 to 24	71.45	583	72.30	308	70.51	275
<b>Level of education</b>						
None	19.36	158	23.00	98	15.38	60
Medium	61.89	505	61.27	261	62.56	244
High	18.75	153	15.73	67	22.05**	86
<b>Socioeconomic status</b>						
Low	34.80	284	38.73	165	30.51	119
Medium	45.22	369	44.13	188	46.41	181
High	19.98	163	17.14	73	23.08*	90
<b>Residence</b>						
Rural area	85.17	695	85.68	365	84.62	330
Urban area	14.83	121	14.32	61	15.38	60
<b>Religion</b>						
Christian/other	71.32	582	71.13	303	71.54	279
Muslim	28.68	234	28.87	123	28.46	111
<b><i>Condom use</i></b>						
<b>Last sex with a spouse</b>						
No	85.68	317	85.54	213	85.95	104
Yes	14.32	53	14.46	36	14.05	17
<b>Last sex extramarital sex (only married)</b>						
No	34.10	74	40.16	51	25.56	23
Yes	65.90	143	59.84	76	74.44*	67
<b>Last sex with a non-marital partner (only single)</b>						
No	50.22	224	53.67	95	47.96	129
Yes	49.78	222	46.33	82	52.04	140
<b>Consistent condom use with a non-marital partner</b>						
No	86.07	445	88.73	189	84.21	256
Yes	13.93	72	11.27	24	15.79	48

	<b>Total</b>	<b>N</b>	<b>Female</b>	<b>N</b>	<b>Males</b>		<b>N</b>
<b><i>Fidelity</i></b>							
Faithful in the past month							
No	22.02	48	6.98	9	43.82		39
Yes	77.98	170	93.02	120	56.18	**	50
Faithful in the past year							
No	37.01	302	21.83	93	53.59		209
Yes	62.41	514	78.17	333	46.41	**	181
Faithful over entire life							
No	77.94	636	68.08	290	88.72		346
Yes	22.06	180	31.92	136	11.28	**	44
<b><i>Relationship variables</i></b>							
Marital Status							
Single	54.66	446	41.55	177	68.97		269
Married	45.34	370	58.45	249	31.03	**	121
Trust (mean score)	3.054	816	3.071	426	3.035		390
Commitment (mean score)	2.634	816	2.620	426	2.647		390
Investments (mean)	2.928	816	2.973	426	2.880	**	390
Level of other alternatives (mean)	2.422	816	2.390	426	2.457		390
Equity	1.977	816	2.091	426	1.852	**	390
Satisfaction (mean)	3.292	816	3.302	426	3.281		390
Self-Verification (mean)	4.314	816	4.280	426	4.351	*	390
<b><i>Self-feelings</i></b>							
Self-esteem (mean)	2.857	816	2.860	426	2.854		390
Mastery (mean)	2.463	816	2.439	426	2.489		390
Depression	1.824	816	1.849	426	1.796		390
Distress	2.341	816	2.399	426	2.277	*	390
<b><i>AIDS specific measures</i></b>							
Positive condom perceptions (mean)	2.274	786	2.334	412	2.206	**	374
Condom use self-efficacy (mean)	1.668	786	1.941	412	1.368	**	374
Fidelity self-efficacy (mean)	2.106	786	2.383	412	1.914	**	374
Perceived pressure to have sex (mean)	1.568	786	1.617	412	1.515	*	374
Relationship emotional support (mean)	1.572	786	1.499	412	1.652		374
AIDS Knowledge	8.698	786	8.743	412	8.650		374
Internal AIDS prevention locus of control (mean)	2.397	786	2.298	412	2.505	**	374

	<b>Total</b>	<b>N</b>	<b>Female</b>	<b>N</b>	<b>Males</b>	<b>N</b>
Relative perceived risk of HIV						
Much lower risk	37.61	293	36.27	148	39.08	145
Lower risk	14.25	111	15.93	65	12.40	46
Higher risk	10.91	85	10.54	43	11.32	42
Much higher risk	37.23	290	37.25	152	37.20	138
Mean age at first sex	16.25	816	16.50	426	15.99 **	390
Total	100			426		390

\*\*p<0.01, \* p<0.05

Table 2: Means and standard deviations of the variables in the social exchange and the self-verification models by sex, socioeconomic status (SES), level of education, and rural/urban residence

	Total Mean <i>St. dev</i>	Sex		SES			Education			Residence	
		Female	Male	Low	Medium	High	Low	Medium	High	Rural	Urban
<b>Relationship variables</b>											
Trust	3.054 <i>0.581</i>	3.071 <i>0.565</i>	3.035 <i>0.598</i>	3.077 <i>0.588</i>	3.029 <i>0.581</i>	3.072 <i>0.571</i>	3.159* <i>0.529</i>	3.038 <i>0.602</i>	2.998 <i>0.552</i>	3.057 <i>0.580</i>	3.036 <i>0.589</i>
Satisfaction	3.292 <i>0.512</i>	3.302 <i>0.503</i>	3.281 <i>0.521</i>	3.263* <i>0.541</i>	3.280 <i>0.488</i>	3.370 <i>0.506</i>	3.342* <i>0.474</i>	3.299 <i>0.506</i>	3.219 <i>0.560</i>	3.279 <i>0.516</i>	3.366 <i>0.481</i>
Commitment	2.634 <i>0.355</i>	2.620 <i>0.358</i>	2.647 <i>0.352</i>	2.645 <i>0.360</i>	2.619 <i>0.341</i>	2.648 <i>0.377</i>	2.647 <i>0.314</i>	2.633 <i>0.363</i>	2.623 <i>0.370</i>	2.637 <i>0.356</i>	2.618 <i>0.349</i>
Level of other alternatives	2.422 <i>0.676</i>	2.390 <i>0.701</i>	2.457 <i>0.646</i>	2.369 <i>0.685</i>	2.432 <i>0.678</i>	2.490 <i>0.649</i>	2.299 <i>0.642</i>	2.466 <i>0.702</i>	2.404 <i>0.605</i>	2.443* <i>0.680</i>	2.300 <i>0.642</i>
Investments	2.928 <i>0.479</i>	2.973 <i>0.471</i>	2.880** <i>0.484</i>	2.946 <i>0.478</i>	2.943 <i>0.486</i>	2.864 <i>0.465</i>	2.963 <i>0.468</i>	2.936 <i>0.476</i>	2.868 <i>0.501</i>	2.923 <i>0.487</i>	2.959 <i>0.431</i>
Underbenefiting	0.156 <i>0.245</i>	0.102 <i>0.207</i>	0.216** <i>0.269</i>	0.148 <i>0.245</i>	0.159 <i>0.246</i>	0.163 <i>0.244</i>	0.141 <i>0.235</i>	0.171 <i>0.250</i>	0.123 <i>0.235</i>	0.190 <i>0.263</i>	0.150 <i>0.241</i>
Overbenefiting	0.133 <i>0.226</i>	0.193 <i>0.251</i>	0.067** <i>0.174</i>	0.140 <i>0.233</i>	0.133 <i>0.233</i>	0.121 <i>0.199</i>	0.171 <i>0.269</i>	0.120 <i>0.215</i>	0.136 <i>0.211</i>	0.102 <i>0.195</i>	0.138 <i>0.231</i>
<b>Verification</b>											
Self-Verification	4.314 <i>0.429</i>	4.280 <i>0.442</i>	4.351* <i>0.412</i>	4.316 <i>0.428</i>	4.339 <i>0.424</i>	4.255 <i>0.440</i>	4.336 <i>0.433</i>	4.292 <i>0.429</i>	4.364 <i>0.424</i>	4.315 <i>0.425</i>	4.311 <i>0.453</i>
<b>Self-feelings</b>											
Self-esteem	2.857 <i>0.385</i>	2.860 <i>0.390</i>	2.854 <i>0.381</i>	2.811** <i>0.386</i>	2.855 <i>0.372</i>	2.943 <i>0.401</i>	2.827** <i>0.376</i>	2.834 <i>0.381</i>	2.963 <i>0.394</i>	2.862 <i>0.390</i>	2.827 <i>0.354</i>
Mastery	2.463 <i>0.567</i>	2.439 <i>0.573</i>	2.489 <i>0.559</i>	2.440 <i>0.542</i>	2.476 <i>0.586</i>	2.476 <i>0.567</i>	2.485 <i>0.575</i>	2.418 <i>0.559</i>	2.589 <i>0.565</i>	2.462 <i>0.576</i>	2.469 <i>0.508</i>
Depression	1.824 <i>0.421</i>	1.849 <i>0.445</i>	1.796 <i>0.393</i>	1.863 <i>0.447</i>	1.808 <i>0.411</i>	1.792 <i>0.396</i>	1.775 <i>0.403</i>	1.843 <i>0.433</i>	1.809 <i>0.400</i>	1.829 <i>0.429</i>	1.794 <i>0.372</i>
Distress	2.341 <i>0.745</i>	2.399 <i>0.739</i>	2.277* <i>0.746</i>	2.313 <i>0.696</i>	2.385 <i>0.764</i>	2.289 <i>0.780</i>	2.385 <i>0.741</i>	2.313 <i>0.713</i>	2.386 <i>0.846</i>	2.355 <i>0.736</i>	2.261 <i>0.791</i>

\*\*p<0.01, \* p<0.05 for differences between males and females; for differences between low, medium and high SES; for differences between low, medium and high level of education; and for differences between urban and rural residents



*Table 3: Standardized Estimates for the Equity Theory Model<sup>47</sup>*

		FEMALE		
		Dependent variables		
Independent variables	Distress	Satisfaction	Commitment	
<i>Equity</i>				
Underbenefiting	-0.062			
Overbenefiting	-0.191**			
Distress		0.106*		-0.237**
		MALE		
		Dependent variables		
Independent variables	Distress	Satisfaction	Commitment	
<i>Equity</i>				
Underbenefiting	-0.072			
Overbenefiting	-0.133*			
Distress		0.070		-0.285**

\*\*p<0.01, \* p<0.05 for differences

*Table 4: Standardized Estimates for the Investment Theory Model*

Independent variables	Dependent variable: Commitment	
Investments		0.045
Level of other alternatives		-0.127**
Satisfaction		0.263**

\*\*p<0.01, \* p<0.05 for differences

*Table 5: Standardized Estimates for the Identity theory Model*

		Dependent variables			
Independent variables	Self-esteem	Depression	Trust	Commitment	
Self-Verification	0.083**	-0.108**	0.051		
Self-esteem			0.230**		
Depression			-0.146**		
Trust					0.896**
		Dependent variables			
Independent variables	Mastery	Distress	Trust	Commitment	
Self-Verification	0.030	0.026	0.118**		
Mastery			0.239**		
Distress			-0.019		
Trust					0.489**

\*\*p<0.01, \* p<0.05 for differences

<sup>47</sup> The standardized estimates are standardized based on the variables' variances.

Table 6: Univariate logistic regressions: odds ratios (OR) and 95% confidence intervals (CI) of married youth reporting condom use in last sex with a spouse, unmarried youth reporting condom use in last sex, and consistency of condom use among youth reporting sex with a non-marital, noncommercial partner, by relationship characteristics, self-feelings, and AIDS specific measures for respondents aged 15 to 24 in Tanzania in 2007

	Condom use in last sex with spouse				Condom use in last sex among unmarried youth				Consistent condom use in non-marital sex			
	OR		OR		OR		OR		OR		OR	
	(95% CI)	p-value	(95% CI)	p-value	(95% CI)	p-value	(95% CI)	p-value	(95% CI)	p-value	(95% CI)	p-value
	Female	N	Male <sup>48</sup>	N	Female	N	Male	N	Female	N	Male	N
<b>Relationship variables</b>												
Trust	0.96 (0.47 - 1.95)	249	1.18 (0.38 - 3.70)	121	1.97 (1.19 - 3.28)**	177	0.96 (0.66 - 1.39)	269	1.54 (0.73 - 3.26)	213	0.95 (0.58 - 1.56)	304
Commitment	1.95 (0.68 - 5.58)	249	1.26 (0.27 - 5.87)	121	3.06 (1.27 - 7.37)*	177	1.89 (0.97 - 3.67)	269	4.82 (1.30 - 17.94)*	213	1.37 (0.59 - 3.21)	304
Investments	0.35 (0.16 - 0.73)**	249	1.87 (0.40 - 8.72)	121	0.92 (0.51 - 1.67)	177	1.04 (0.65 - 1.65)	269	0.35 (0.16 - 0.77)**	213	0.90 (0.49 - 1.68)	304
Level of other alternatives	1.16 (0.71 - 1.88)	249	1.42 (0.66 - 3.02)	121	1.19 (0.75 - 1.88)	177	1.11 (0.76 - 1.63)	269	1.18 (0.61 - 2.27)	213	1.31 (0.81 - 2.12)	304
Underbenefiting	0.30 (0.04 - 2.40)	249	2.66 (0.45 - 15.75)	121	0.46 (0.10 - 2.16)	177	1.90 (0.76 - 4.73)	269	0.00 (0.00 - 2.51)	213	1.28 (0.40 - 4.07)	304
Overbenefiting	0.64 (0.15 - 2.73)	249	0.69 (0.01 - 94.21)	121	1.85 (0.55 - 6.25)	177	0.41 (0.11 - 1.46)	269	1.68 (0.31 - 8.98)	213	0.21 (0.02 - 2.22)	304
Satisfaction	0.8 (0.36 - 1.77)	249	1.43 (0.46 - 4.46)	121	1.62 (0.95 - 2.77)	177	0.93 (0.59 - 1.46)	269	1.69 (0.72 - 4.00)	213	0.90 (0.50 - 1.64)	304
Self-Verification	0.88 (0.39 - 1.97)	249	0.39 (0.10 - 1.43)	121	0.78 (0.41 - 1.51)	177	0.87 (0.49 - 1.53)	269	2.46 (0.84 - 7.21)	213	1.35 (0.61 - 2.98)	304
Multiple partners in past year												
No (reference)	1.00	249	1.00	121	1.00	177	1.00	269	1.00	213	1.00	304
Yes	1.02 (0.37 - 2.85)		1.76 (0.61 - 5.12)		2.45 (1.29 - 4.65)**		0.66 (0.41 - 1.07)		1.33 (0.57 - 3.12)		0.70 (0.38 - 1.29)	
Marital Status												
Single									1.00	213	1.00	304
Married									1.34 (0.47 - 3.86)		2.10 (1.00 - 4.43)	

<sup>48</sup> Only three males aged 15 to 19 were married and all three reported that they did not use a condom in their last sex with a spouse. Therefore the indicator for age is not included in this analysis.

	Condom use in last sex with spouse				Condom use in last sex among unmarried youth				Consistent condom use in non-marital sex			
	OR		OR		OR		OR		OR		OR	
	(95% CI) p-value		(95% CI) p-value		(95% CI) p-value		(95% CI) p-value		(95% CI) p-value		(95% CI) p-value	
	Female	N	Male <sup>48</sup>	N	Female	N	Male	N	Female	N	Male	N
<b><i>Self-feelings</i></b>												
Self-esteem	1.22	249	0.46	121	1.13	177	1.09	269	1.57	213	1.64	304
	(0.49 - 3.04)		(0.09 - 2.22)		(0.54 - 2.38)		(0.59 - 2.02)		(0.54 - 4.60)		(0.73 - 3.69)	
Mastery	1.28	249	0.81	121	1.40	177	0.89	269	1.53	213	0.68	304
	(0.69 - 2.37)		(0.30 - 2.22)		(0.84 - 2.34)		(0.58 - 1.35)		(0.74 - 3.16)		(0.38 - 1.21)	
Depression	1.88	249	5.57	121	0.86	177	1.39	269	0.94	213	0.81	304
	(0.87 - 4.08)		(1.45-21.32)*		(0.45 - 1.63)		(0.77 - 2.53)		(0.38 - 2.33)		(0.37 - 1.78)	
Distress	0.65	249	1.46	121	0.92	177	0.73	269	0.56	213	0.77	304
	(0.40 - 1.07)		(0.75 - 2.84)		(0.61 - 1.40)		(0.52 - 1.02)		(0.30 - 1.05)		(0.50 - 1.20)	
<b><i>AIDS specific measures</i></b>												
Positive beliefs about condoms	0.58	243	0.72	117	0.46	169	0.91	257	0.74	205	1.20	291
	(0.31 - 1.08)		(0.22 - 2.35)		(0.23 - 0.92)*		(0.49 - 1.71)		(0.29 - 1.93)		(0.55 - 2.64)	
Condom use self-efficacy	0.46	243	0.80	117	0.48	169	0.34	257	0.64	205	0.34	291
	(0.29-0.72)**		(0.32 - 2.00)		(0.32 - 0.72)**		(0.19 - 0.59)**		(0.35 - 1.15)		(0.14 - 0.84)*	
AIDS prevention knowledge	1.12	243	0.91	117	1.35	169	1.15	257	0.85	205	1.19	291
	(0.83 - 1.52)		(0.62 - 1.34)		(1.03 - 1.78)*		(0.94 - 1.40)		(0.60 - 1.20)		(0.91 - 1.56)	
Internal AIDS prevention locus of control	1.43	243	1.25	117	1.18	169	1.34	257	1.82	205	1.46	291
	(0.98 - 2.10)		(0.73 - 2.12)		(0.84 - 1.65)		(1.02 - 1.76)*		(1.07 - 3.07)*		(1.02 - 2.08)*	
Risk perception	0.97	241	0.91	116	0.98	167	1.00	255	1.16	203	0.77	289
	(0.74 - 1.27)		(0.61 - 1.36)		(0.77 - 1.24)		(0.83 - 1.20)		(0.82 - 1.65)		(0.61-0.98)*	
<b><i>Controls:</i></b>												
Aged 15 to 19 (reference)	1.00	249			1.00	177	1.00	269	1.00	213	1.00	304
Aged 20 to 24	0.93				0.86		0.90		0.55		1.83	
	(0.38 - 2.27)				(0.47 - 1.56)		(0.55 - 1.46)		(0.23 - 1.29)		(0.91 - 3.69)	
Socioeconomic status												
Low	1.14	249	0.90	121	0.76	177	0.75	269	0.40	213	0.91	304
	(0.52 - 2.51)		(0.29 - 2.75)		(0.38 - 1.49)		(0.44 - 1.26)		(0.13 - 1.29)		(0.46 - 1.78)	
Medium (reference)	1.00		1.00		1.00		1.00		1.00		1.00	
High	1.52		1.10		2.81		1.55		1.50		0.87	
	(0.56 - 4.10)		(0.28 - 4.23)		(1.21 - 6.49)*		(0.89 - 2.69)		(0.55 - 4.09)		(0.42 - 1.81)	

	Condom use in last sex with spouse				Condom use in last sex among unmarried youth				Consistent condom use in non-marital sex			
	OR		OR		OR		OR		OR		OR	
	(95% CI) p-value		(95% CI) p-value		(95% CI) p-value		(95% CI) p-value		(95% CI) p-value		(95% CI) p-value	
	Female	N	Male <sup>48</sup>	N	Female	N	Male	N	Female	N	Male	N
Level of education												
None	0.68	249	0.26	121	1.00	177	0.67	269	1.07	213	0.22	304
	(0.27 - 1.67)		(0.03 - 2.10)		(0.43 - 2.32)		(0.34 - 1.33)		(0.32 - 3.57)		(0.05-0.95)*	
Medium (reference)	1.00		1.00		1.00		1.00		1.00		1.00	
High	2.66		2.18		1.75		1.38		2.35		0.98	
	(0.98 - 7.22)		(0.40-11.80)		(0.86 - 3.57)		(0.81 - 2.34)		(0.91 - 6.10)		(0.48 - 1.99)	
Residence												
Rural area (reference)	1.00	249	1.00	121	1.00	177	1.00	269	1.00	213	1.00	304
Urban area	1.13		1.50		2.43		2.24		2.70		0.71	
	(0.44 - 2.94)		(0.38 - 5.94)		(0.97 - 6.08)		(1.13 - 4.45)*		(1.02 - 7.17)*		(0.28 - 1.77)	
Religion												
Christian/other (reference)	1.00	249	1.00	121	1.00	177	1.00	269	1.00	213	1.00	304
Muslim	1.83		1.13		1.38		1.03		0.84		0.79	
	(0.87 - 3.82)		(0.37 - 3.50)		(0.72 - 2.61)		(0.61 - 1.74)		(0.33 - 2.14)		(0.39 - 1.60)	
Reported health status	1.11	249	1.21	121	0.9	177	1.31	269	0.96	213	1.10	304
	(0.75 - 1.65)		(0.65 - 2.22)		(0.65 - 1.25)		(1.00 - 1.74)		(0.61 - 1.52)		(0.77 - 1.57)	

\*\*p<0.01, \* p<0.05 for differences

Table 7: Multivariate logistic regressions: odds ratios (OR) and 95% confidence intervals (CI) of married youth reporting condom use in last sex with a spouse, unmarried youth reporting condom use in last sex, and consistency of condom use among youth reporting sex with a non-marital, noncommercial partner, by relationship characteristics, self-feelings, and AIDS specific measures for respondents aged 15 to 24 in Tanzania in 2007

	Condom use in last sex with spouse		Condom use in last sex among unmarried youth		Consistent condom use in non-marital sex	
	OR (95% CI) p-value		OR (95% CI) p-value		OR (95% CI) p-value	
	Female	Male	Female	Male	Female <sup>49</sup>	Male
<b><i>Relationship variables</i></b>						
Trust	0.54 (0.16 - 1.80)	0.83 (0.14 - 4.82)	3.55 (1.44 - 8.73)**	0.80 (0.44 - 1.45)	1.02 (0.20 - 5.09)	0.86 (0.41 - 1.80)
Commitment	6.09 (1.18 - 31.32)*	2.01 (0.20 - 20.11)	2.22 (0.66 - 7.49)	2.43 (0.89 - 6.62)	11.98 (1.34 - 107.26)*	1.85 (0.54 - 6.29)
Investments	0.30 (0.11 - 0.84)*	1.18 (0.14 - 9.93)	0.98 (0.41 - 2.30)	0.88 (0.45 - 1.70)	0.09 (0.02 - 0.41)**	0.59 (0.23 - 1.57)
Level of other alternatives	0.84 (0.41 - 1.73)	0.98 (0.35 - 2.72)	1.45 (0.71 - 2.96)	0.89 (0.54 - 1.48)	3.16 (0.83 - 12.09)	0.97 (0.53 - 1.77)
Underbenefiting	0.18 (0.01 - 2.28)	2.13 (0.24 - 18.94)	3.20 (0.36 - 28.56)	1.89 (0.60 - 6.01)	0.00 (0.00 - 0.77)*	1.09 (0.25 - 4.80)
Overbenefiting	0.65 (0.10 - 4.35)	0.38 (0.00 - 132.21)	1.53 (0.26 - 9.04)	0.46 (0.09 - 2.41)	1.21 (0.06 - 23.31)	0.23 (0.02 - 2.92)
Satisfaction	0.76 (0.22 - 2.62)	1.93 (0.30 - 12.40)	0.84 (0.33 - 2.13)	0.7 (0.37 - 1.33)	1.18 (0.21 - 6.66)	0.75 (0.32 - 1.72)
Self-Verification	0.68 (0.23 - 2.06)	0.20 (0.04 - 1.19)	0.70 (0.27 - 1.84)	0.98 (0.47 - 2.02)	6.67 (0.92 - 48.16)	1.45 (0.56 - 3.76)
Multiple partners in past year						
No (reference)	1.00	1.00	1.00	1.00	1.00	1.00
Yes	0.85 (0.24 - 3.03)	1.60 (0.46 - 5.62)	2.88 (1.24 - 6.67)*	0.66 (0.37 - 1.17)	0.92 (0.20 - 4.25)	0.51 (0.22 - 1.18)
Marital Status						
Single (reference)					1.00	1.00
Married					4.44 (0.70 - 28.18)	3.42 (1.14 - 10.24)*

<sup>49</sup> 3 failures completely determined.

	Condom use in last sex with spouse		Condom use in last sex among unmarried youth		Consistent condom use in non-marital sex	
	OR		OR		OR	
	(95% CI) p-value		(95% CI) p-value		(95% CI) p-value	
	Female	Male	Female	Male	Female <sup>49</sup>	Male
<b><i>AIDS specific measures</i></b>						
Positive beliefs about condoms	0.65 (0.21 - 1.97)	0.56 (0.09 - 3.36)	0.98 (0.32 - 2.96)	0.94 (0.41 - 2.13)	1.44 (0.22 - 9.40)	0.92 (0.33 - 2.52)
Condom use self-efficacy	0.33 (0.17 - 0.64)**	0.81 (0.21 - 3.07)	0.32 (0.17 - 0.62)**	0.28 (0.15 - 0.53)**	0.29 (0.10 - 0.85)*	0.25 (0.08 - 0.73)*
AIDS prevention knowledge	1.01 (0.71 - 1.45)	0.93 (0.55 - 1.57)	1.43 (1.00 - 2.05)*	1.05 (0.84 - 1.32)	0.62 (0.35 - 1.08)	1.01 (0.75 - 1.35)
Internal AIDS prevention locus of control	1.63 (0.92 - 2.89)	1.27 (0.58 - 2.78)	1.25 (0.79 - 1.98)	1.43 (0.99 - 2.06)	0.92 (0.42 - 2.02)	1.77 (1.13 - 2.77)*
Risk perception	1.06 (0.75 - 1.50)	0.77 (0.46 - 1.28)	1.20 (0.88 - 1.65)	0.88 (0.70 - 1.10)	0.94 (0.57 - 1.55)	0.72 (0.54 - 0.95)*
<b><i>Controls:</i></b>						
Aged 15 to 19 (reference)	1.00		1.00	1.00	1.00	1.00
Aged 20 to 24	0.85 (0.29 - 2.49)		0.45 (0.20 - 1.02)	0.79 (0.43 - 1.49)	0.47 (0.13 - 1.73)	1.41 (0.60 - 3.35)
Socioeconomic status						
Low	1.70 (0.65 - 4.47)	0.84 (0.19 - 3.76)	0.67 (0.27 - 1.66)	0.72 (0.36 - 1.42)	0.15 (0.02 - 1.15)	1.11 (0.49 - 2.53)
Medium (reference)	1.00	1.00	1.00	1.00	1.00	1.00
High	0.91 (0.26 - 3.25)	0.48 (0.05 - 4.35)	2.43 (0.72 - 8.22)	0.76 (0.37 - 1.58)	0.53 (0.10 - 2.73)	0.55 (0.21 - 1.45)
Level of education						
None	0.50 (0.15 - 1.62)	0.33 (0.03 - 3.07)	1.14 (0.36 - 3.54)	0.89 (0.39 - 2.00)	0.92 (0.15 - 5.79)	0.30 (0.06 - 1.46)
Medium (reference)	1.00	1.00	1.00	1.00	1.00	1.00
High	2.62 (0.75 - 9.16)	2.90 (0.30 - 27.92)	1.65 (0.58 - 4.69)	1.44 (0.72 - 2.87)	1.36 (0.32 - 5.79)	1.18 (0.49 - 2.81)

	Condom use in last sex with spouse		Condom use in last sex among unmarried youth		Consistent condom use in non-marital sex	
	OR		OR		OR	
	(95% CI) p-value		(95% CI) p-value		(95% CI) p-value	
	Female	Male	Female	Male	Female <sup>49</sup>	Male
Residence						
Rural area (reference)	1.00	1.00	1.00	1.00	1.00	1.00
Urban area	1.42	0.74	1.55	2.38	4.77	0.87
	(0.42 - 4.85)	(0.09 - 5.75)	(0.47 - 5.10)	(1.03 - 5.49)*	(0.96 - 23.77)	(0.29 - 2.58)
Religion						
Christian/other (reference)	1.00	1.00	1.00	1.00	1.00	1.00
Muslim	2.27	1.07	2.34	0.92	0.35	0.87
	(0.90 - 5.76)	(0.27 - 4.19)	(0.89 - 6.14)	(0.48 - 1.78)	(0.07 - 1.86)	(0.38 - 2.00)
Reported health status						
	1.27	1.43	0.95	1.53	1.62	1.40
	(0.79 - 2.03)	(0.63 - 3.22)	(0.60 - 1.53)	(1.09 - 2.16)*	(0.75 - 3.50)	(0.91 - 2.17)
Total sample size	241	114	167	255	203	289

\*\*p<0.01, \* p<0.05 for difference

Table 8: Univariate logistic regressions: odds ratios (OR) and 95% confidence intervals (CI) of youth reporting fidelity to a partner in the past month, past year, and over their lifetime, by relationship characteristics, self-feelings, and AIDS specific measures for respondents aged 15 to 24 who were in relationships and sexually experienced in Tanzania in 2007

	Fidelity in past month <sup>50</sup>		Fidelity in past 12 months				Fidelity over lifetime			
	OR (95% CI)		OR (95% CI)		OR (95% CI)		OR (95% CI)			
	Male	N	Female	N	Male	N	Female	N	Male	N
<b><i>Relationship variables</i></b>										
Trust	1.05	89	1.29	426	1.50	390	1.78	426	1.04	390
	(0.43 - 2.54)		(0.87 - 1.93)		(1.06 - 2.11)*		(1.21 - 2.61)**		(0.62 - 1.77)	
Commitment	5.85	89	0.71	426	1.99	390	1.24	426	1.35	390
	(1.41 - 24.33)*		(0.37 - 1.38)		(1.12 - 3.52)*		(0.69 - 2.23)		(0.56 - 3.30)	
Investments	0.85	89	1.46	426	1.55	390	0.77	426	1.66	390
	(0.26 - 2.76)		(0.91 - 2.35)		(1.01 - 2.37)*		(0.50 - 1.18)		(0.81 - 3.40)	
Level of other alternatives	0.48	89	0.56	426	0.68	390	0.69	426	0.55	390
	(0.25 - 0.95)*		(0.40 - 0.80)**		(0.50 - 0.93)*		(0.51 - 0.92)*		(0.33 - 0.93)*	
Underbenefiting	1.39	89	1.58	426	1.30	390	0.63	426	1.20	390
	(0.30 - 6.32)		(0.48 - 5.18)		(0.62 - 2.73)		(0.23 - 1.78)		(0.38 - 3.77)	
Overbenefiting	0.14	89	1.44	426	0.56	390	0.62	426	0.05	390
	(0.00 - 5.52)		(0.56 - 3.69)		(0.17 - 1.83)		(0.27 - 1.43)		(0.00 - 1.66)	
Satisfaction	1.05	89	1.08	426	1.15	390	1.14	426	1.30	390
	(0.45 - 2.43)		(0.69 - 1.71)		(0.78 - 1.68)		(0.76 - 1.72)		(0.69 - 2.45)	
Self-Verification	1.62	89	1.41	426	1.61	390	2.04	426	0.82	390
	(0.56 - 4.69)		(0.85 - 2.34)		(0.98 - 2.65)		(1.25 - 3.34)**		(0.39 - 1.72)	
Marital Status										
Single (reference)			1.00	426	1.00	390	1.00	426	1.00	390
Married			3.16		1.04		1.40		0.82	
			(1.96 - 5.10)**		(0.68 - 1.60)		(0.92 - 2.13)		(0.40 - 1.64)	
<b><i>Self-feelings</i></b>										
Self-esteem	1.74	89	0.68	426	1.08	390	1.23	426	0.93	390
	(0.53 - 5.76)		(0.38 - 1.23)		(0.64 - 1.82)		(0.73 - 2.07)		(0.41 - 2.12)	
Mastery	1.36	89	0.99	426	1.08	390	1.06	426	0.69	390
	(0.59 - 3.16)		(0.66 - 1.48)		(0.75 - 1.54)		(0.74 - 1.51)		(0.38 - 1.24)	
Depression	0.38	89	0.67	426	0.58	390	0.53	426	0.63	390
	(0.11 - 1.25)		(0.41 - 1.11)		(0.34 - 0.97)*		(0.32 - 0.86)*		(0.27 - 1.47)	

<sup>50</sup> Females are not shown because 117 cases were completely determined. Age was dropped because all males aged 20-24 reported infidelity in the past month.



	Fidelity in past month <sup>50</sup>		Fidelity in past 12 months				Fidelity over lifetime			
	OR		OR				OR			
	(95% CI)		(95% CI)				(95% CI)			
	Male	N	Female	N	Male	N	Female	N	Male	N
Distress	0.52	89	1.00	426	1.03	390	1.01	426	1.09	390
	(0.27 - 0.99)*		(0.73 - 1.36)		(0.79 - 1.34)		(0.77 - 1.33)		(0.72 - 1.65)	
<b><i>AIDS specific measures</i></b>										
Fidelity self-efficacy	1.53	87	1.37	412	1.33	374	1.28	412	1.32	374
	(0.96 - 2.44)		(1.10 - 1.70)**		(1.08 - 1.65)**		(1.06 - 1.54)**		(0.97 - 1.81)	
Pressure to have sex	2.29	87	1.26	412	1.34	374	1.56	412	1.56	374
	(1.06 - 4.94)*		(0.83 - 1.92)		(0.93 - 1.93)		(1.09 - 2.23)*		(0.93 - 2.64)	
Relationship emotional support	1.92	87	0.68	412	0.99	374	1.22	412	0.87	374
	(0.75 - 4.90)		(0.48 - 0.96)*		(0.74 - 1.33)		(0.88 - 1.69)		(0.54 - 1.41)	
AIDS prevention knowledge	1.28	87	0.98	412	1.11	374	1.00	412	0.99	374
	(0.89 - 1.83)		(0.81 - 1.19)		(0.94 - 1.30)		(0.84 - 1.19)		(0.77 - 1.28)	
Internal AIDS prevention locus of control	1.32	87	1.02	412	0.90	374	1.22	412	0.68	374
	(0.85 - 2.05)		(0.79 - 1.31)		(0.73 - 1.12)		(0.97 - 1.53)		(0.48 - 0.96)*	
Risk perception	1.03	87	1.00	408	0.96	371	1.10	408	0.87	371
	(0.75 - 1.41)		(0.84 - 1.19)		(0.82 - 1.12)		(0.94 - 1.29)		(0.68 - 1.11)	
Age at first sex	1.26	89	1.35	426	1.10	390	1.32	426	1.32	390
	(1.01 - 1.56)*		(1.19 - 1.54)**		(1.01 - 1.20)*		(1.18 - 1.49)**		(1.14 - 1.53)**	
<b><i>Controls:</i></b>										
Aged 15 to 19 (reference)			1.00	426	1.00	390	1.00	426	1.00	
Aged 20 to 24			1.24		0.69		0.39		0.33	390
			(0.75 - 2.05)		(0.44 - 1.06)		(0.25 - 0.60)**		(0.17 - 0.63)**	
<b>Socioeconomic status</b>										
Low	0.92	89	1.54	426	0.85	390	0.87	426	1.20	390
	(0.38 - 2.21)		(0.91 - 2.61)		(0.55 - 1.32)		(0.56 - 1.36)		(0.62 - 2.34)	
Medium (reference)	1.00		1.00		1.00		1.00		1.00	
High	1.92		0.83		1.01		0.67		2.10	390
	(0.61 - 6.07)		(0.45 - 1.54)		(0.63 - 1.63)		(0.36 - 1.22)		(1.08 - 4.09)*	
<b>Level of education</b>										
None	2.52	89	0.83	426	1.28	390	1.03	426	0.68	390
	(0.48 - 13.25)		(0.48 - 1.45)		(0.74 - 2.23)		(0.63 - 1.69)		(0.26 - 1.80)	
Medium (reference)	1.00				1.00		1.00		1.00	

	Fidelity in past month <sup>50</sup>		Fidelity in past 12 months				Fidelity over lifetime			
	OR		OR				OR			
	(95% CI)		(95% CI)				(95% CI)			
	Male	N	Female	N	Male	N	Female	N	Male	N
High	0.24		0.75		1.01		0.69		1.38	
	(0.02 - 2.45)		(0.40 - 1.40)		(0.62 - 1.62)		(0.38 - 1.27)		(0.68 - 2.81)	
<b>Residence</b>										
Rural area (reference)	1.00	89	1.00	426	1.00	390	1.00	426	1.00	390
Urban area	0.74		0.62		0.73		0.59		1.05	
	(0.24 - 2.33)		(0.34 - 1.13)		(0.42 - 1.29)		(0.31 - 1.12)		(0.44 - 2.47)	
<b>Religion</b>										
Christian/other	1.00	89	1.00	426	1.00	390	1.00	426	1.00	390
Muslim	1.20		0.87		0.58		0.94		0.62	
	(0.48 - 2.99)		(0.53 - 1.43)		(0.37 - 0.91)*		(0.60 - 1.47)		(0.29 - 1.33)	
<b>Reported health status</b>										
	0.84	89	1.00	426	0.89	390	0.84	426	0.95	390
	(0.51 - 1.38)		(0.78 - 1.29)		(0.71 - 1.12)		(0.67 - 1.05)		(0.66 - 1.36)	

\*\*p<0.01, \* p<0.05 for differences

Table 9: Multivariate logistic regressions: odds ratios (OR) and 95% confidence intervals (CI) of youth reporting fidelity to a partner in the past month, past year, and over their lifetime, by relationship characteristics, self-feelings, and AIDS specific measures for respondents aged 15 to 24 who were in relationships and sexually experienced in Tanzania in 2007

	Reported fidelity				
	past month <sup>51</sup>	past year		over lifetime	
	OR (95% CI)	Female	Male	Female	Male
<b>Relationship variables</b>					
Trust	0.19 (0.02 - 1.84)	0.83 (0.45 - 1.56)	1.12 (0.67 - 1.86)	1.65 (0.87 - 3.14)	0.50 (0.21-1.19)
Commitment	35.52 (2.17-582.28)*	0.45 (0.19 - 1.09)	1.52 (0.70 - 3.33)	0.47 (0.20 - 1.13)	1.47 (0.38-5.65)
Investments	1.73 (0.16 - 18.90)	1.31 (0.71 - 2.41)	1.54 (0.86 - 2.77)	0.78 (0.42 - 1.43)	1.69 (0.55 - 5.22)
Level of alternatives	0.31 (0.09 - 1.10)	0.50 (0.31-0.80)**	0.75 (0.51 - 1.10)	0.87 (0.57 - 1.34)	0.41 (0.20 - 0.84)*
Underbenefiting	1.34 (0.13 - 13.79)	2.21 (0.45 - 10.93)	1.68 (0.68 - 4.17)	0.58 (0.15 - 2.29)	1.53 (0.29 - 8.09)
Overbenefiting	0.06 (0.00 - 41.56)	1.49 (0.44 - 4.99)	1.90 (0.44 - 8.16)	0.22 (0.07 - 0.72)*	0.15 (0.00 - 7.61)
Satisfaction	0.99 (0.14 - 6.71)	0.86 (0.45 - 1.66)	0.81 (0.48 - 1.37)	0.84 (0.43 - 1.62)	0.89 (0.34 - 2.32)
Self-Verification	1.05 (0.18 - 6.04)	1.09 (0.58 - 2.03)	1.79 (1.00 - 3.22)	2.42 (1.26 - 4.64)**	0.74 (0.28 - 1.95)
Marital Status					
Single (reference)		1.00	1.00	1.00	1.00
Married		3.23 (1.77 - 5.89)**	1.02 (0.58 - 1.80)	2.00 (1.12 - 3.58)*	1.74 (0.58 - 5.24)
<b>AIDS specific measures</b>					
Fidelity self-efficacy	1.67 (0.74 - 3.76)	1.42 (1.08 - 1.87)*	1.39 (1.07 - 1.80)*	1.29 (1.01 - 1.64)*	1.45 (0.96 - 2.20)
Pressure to have sex	1.80 (0.72 - 4.49)	1.31 (0.76 - 2.25)	1.29 (0.84 - 1.98)	1.61 (1.00-2.58)*	1.91 (0.99-3.71)
Relationship emotional support	1.49 (0.47 - 4.73)	0.72 (0.46 - 1.13)	0.98 (0.69 - 1.41)	1.18 (0.77 - 1.82)	0.92 (0.49 - 1.75)

<sup>51</sup> Females are not shown because 117 cases were completely determined. Age was dropped because all males aged 20-24 reported infidelity in the past month.

	Reported fidelity				
	past month <sup>51</sup>	past year		over lifetime	
	OR	OR		OR	
	(95% CI)	(95% CI)		(95% CI)	
	Male	Female	Male	Female	Male
AIDS prevention knowledge	1.34 (0.77 - 2.33)	1.00 (0.80 - 1.25)	1.13 (0.94 - 1.36)	1.00 (0.81 - 1.23)	1.12 (0.80 - 1.57)
Internal AIDS prevention locus of control	0.89 (0.41 - 1.94)	0.98 (0.71 - 1.35)	0.87 (0.65 - 1.16)	1.07 (0.79 - 1.45)	0.57 (0.33 - 0.97)*
Risk perception	0.98 (0.59 - 1.63)	1.06 (0.85 - 1.32)	0.99 (0.82 - 1.18)	1.18 (0.96 - 1.45)	0.98 (0.71 - 1.36)
Age at first sex	1.33 (0.94 - 1.88)	1.35 (1.15 - 1.57)**	1.13 (1.01 - 1.25)*	1.66 (1.40 - 1.95)**	1.71 (1.36 - 2.16)**
<b>Controls:</b>					
Aged 15 to 19 (reference)		1.00	1.00	1.00	1.00
Aged 20 to 24		0.54 (0.29 - 1.01)	0.44 (0.25 - 0.78)**	0.14 (0.07 - 0.27)**	0.07 (0.02 - 0.23)**
<b>Socioeconomic status</b>					
Low	1.71 (0.33 - 8.85)	1.41 (0.77 - 2.58)	0.75 (0.44 - 1.28)	0.75 (0.43 - 1.30)	1.75 (0.67 - 4.60)
Medium (reference)	1.00	1.00	1.00	1.00	1.00
High	16.22 (1.35-194.70)*	1.04 (0.48 - 2.25)	1.12 (0.61 - 2.05)	0.90 (0.41 - 1.99)	4.21 (1.44 - 12.32)**
<b>Level of education</b>					
None	6.80 (0.27 - 169.09)	0.68 (0.34 - 1.36)	1.38 (0.73 - 2.61)	1.37 (0.72 - 2.61)	0.92 (0.26 - 3.21)
Medium (reference)	1.00	1.00	1.00	1.00	1.00
High	0.12 (0.00 - 3.19)	1.15 (0.53 - 2.52)	1.05 (0.57 - 1.91)	0.62 (0.29 - 1.36)	1.26 (0.46 - 3.48)
<b>Residence</b>					
Rural area (reference)	1.00	1.00	1.00	1.00	1.00
Urban area	0.29 (0.04 - 1.98)	0.47 (0.22 - 1.00)	0.68 (0.35 - 1.31)	0.58 (0.26 - 1.29)	0.66 (0.20 - 2.21)
<b>Religion</b>					
Christian/other	1.00	1.00	1.00	1.00	1.00
Muslim	0.45 (0.10 - 2.10)	0.99 (0.54 - 1.84)	0.45 (0.26-0.76)**	0.81 (0.45 - 1.48)	0.42 (0.16 - 1.10)
Reported health status	1.43 (0.61 - 3.35)	1.01 (0.74 - 1.37)	0.93 (0.71 - 1.22)	0.86 (0.64 - 1.15)	1.07 (0.66-1.74)
Total sample size	86	408	371	408	371

### Appendix C: Tables not presented

Table A: Multivariate logistic regressions: odds ratios (OR) and 95% confidence intervals (CI) of married youth reporting condom use in last sex with a spouse and with a non-marital partner for respondents aged 15 to 24 in Tanzania in 2007

	Condom use in last sex with spouse		Condom use in last non-marital sex	
	OR		OR	
	(95% CI) p-value		(95% CI) p-value	
	Females	Male <sup>52</sup>	Females	Male <sup>53</sup>
<b><i>Relationship variables</i></b>				
Trust	0.68 (0.20 - 2.30)	0.47 (0.05 - 4.15)	1.53 (0.48 - 4.91)	0.25 (0.01 - 8.27)
Commitment	6.02 (1.00 - 36.24)	13.59 (0.51 - 360.62)	1.14 (0.18 - 7.26)	3.16 (0.14 - 73.48)
Investments	0.25 (0.08 - 0.83)*	5.17 (0.33 - 79.99)	0.4 (0.11 - 1.48)	1.52 (0.06 - 37.56)
Level of other alternatives	0.82 (0.38 - 1.75)	0.94 (0.29 - 3.09)	0.75 (0.33 - 1.72)	0.32 (0.06 - 1.73)
Underbenefiting	0.16 (0.01 - 2.18)	2.35 (0.23 - 24.36)	2.19 (0.23 - 21.13)	6.98 (0.21 - 236.88)
Overbenefiting	0.45 (0.06 - 3.52)	1.09 (0.00 - 648.57)	0.51 (0.07 - 3.89)	
Satisfaction	1.2 (0.32 - 4.50)	1.4 (0.18 - 10.59)	2.97 (0.62 - 14.12)	0.02 (0.00 - 0.55)*
Self-Verification	0.86 (0.26 - 2.87)	0.47 (0.07 - 3.17)	0.83 (0.25 - 2.81)	0.18 (0.01 - 3.19)
Multiple partners in the past year				
No (reference)	1.00	1.00	1.00	1.00
Yes	0.62 (0.16 - 2.39)	1.76 (0.45 - 6.95)	1.06 (0.34 - 3.29)	0.92 (0.14 - 5.95)
<b><i>Self-feelings</i></b>				
Self-esteem	0.7 (0.15 - 3.20)	0.45 (0.03 - 6.20)	1.64 (0.34 - 7.86)	99.09 (1.34 - 7,335.72)*
Mastery	1.07 (0.41 - 2.78)	0.64 (0.11 - 3.92)	0.56 (0.21 - 1.49)	1.15 (0.11 - 12.48)
Depression	3.06 (0.96 - 9.79)	11.45 (1.35 - 97.24)*	1.17 (0.40 - 3.39)	6.84 (0.33 - 142.38)
Distress	0.36 (0.17 - 0.78)**	2.85 (0.74 - 10.97)	1.04 (0.47 - 2.31)	0.46 (0.11 - 1.96)
<b><i>AIDS specific measures</i></b>				
Positive beliefs about condoms	0.4 (0.11 - 1.45)	0.66 (0.08 - 5.21)	0.43 (0.12 - 1.54)	2.07 (0.25 - 17.36)

<sup>52</sup> The dummy variable for membership in the older age group predicts failure perfectly for males. This variable is dropped and 2 observations are not used.

<sup>53</sup> An overbenefiting value of 0 predicts success perfectly for males. Overbenefiting is dropped and 8 observations are not used. The dummy variable for membership in the older age group predicts success perfectly for males. This variable is dropped and 1 observation is not used.

The dummy variable for not having secondary or higher education predicts success perfectly for males. This variable is dropped and 3 observations are not used.

	Condom use in last sex with spouse		Condom use in last non-marital sex	
	OR		OR	
	(95% CI) p-value		(95% CI) p-value	
	Females	Male <sup>52</sup>	Females	Male <sup>53</sup>
Condom use self-efficacy	0.31 (0.15 - 0.64)**	1.19 (0.30 - 4.79)	0.75 (0.41 - 1.35)	0.18 (0.02 - 1.76)
AIDS prevention knowledge	0.98 (0.68 - 1.42)	1.00 (0.56 - 1.80)	0.67 (0.44 - 1.04)	0.67 (0.27 - 1.67)
Internal AIDS prevention locus of control	1.68 (0.93 - 3.04)	1.38 (0.55 - 3.45)	1.45 (0.83 - 2.54)	1.44 (0.49 - 4.23)
Risk perception	1.08 (0.75 - 1.56)	0.68 (0.37 - 1.27)	0.89 (0.62 - 1.27)	1.07 (0.53 - 2.15)
<i>Controls:</i>				
Aged 15 to 19 (reference)	1.00		1.00	
Aged 20 to 24	0.69 (0.22 - 2.16)		1.22 (0.36 - 4.18)	
Socioeconomic status				
Low	1.74 (0.64 - 4.72)	0.92 (0.18 - 4.58)	1.66 (0.61 - 4.52)	2.61 (0.43 - 16.04)
Medium (reference)	1.00	1.00	1.00	1.00
High	1.34 (0.36 - 5.07)	1.24 (0.08 - 19.86)	1.61 (0.45 - 5.68)	122.27 (1.32-11,356.51)*
Level of education				
None	0.54 (0.16 - 1.83)	0.37 (0.03 - 4.29)	0.37 (0.12 - 1.15)	1.71 (0.15 - 19.30)
Medium (reference)	1.00	1.00	1.00	1.00
High	2.18 (0.58 - 8.16)	2.06 (0.13 - 31.80)	1.06 (0.25 - 4.56)	
Residence				
Rural area (reference)	1.00	1.00	1.00	1.00
Urban area	1.12 (0.30 - 4.17)	0.52 (0.04 - 6.36)	1.89 (0.57 - 6.23)	0.02 (0.00 - 0.63)*
Religion				
Christian/other (reference)	1.00	1.00	1.00	1.00
Muslim	1.73 (0.63 - 4.75)	1.11 (0.24 - 5.14)	0.84 (0.32 - 2.24)	0.44 (0.04 - 4.63)
Reported health status	1.06 (0.63 - 1.76)	1.74 (0.70 - 4.36)	0.61 (0.34 - 1.10)	1.00 (0.29 - 3.46)
Total sample size	241	114	122	77

\*\*p<0.01, \* p<0.05 for differences

Table B: Multivariate logistic regressions: odds ratios (OR) and 95% confidence intervals (CI) of unmarried youth reporting condom use in last sex and consistency of condom use among youth reporting sex with a non-marital, noncommercial partner for respondents aged 15 to 24 in Tanzania in 2007

	Condom use in last sex among unmarried youth		Consistent condom use in non-marital sex <sup>54</sup>	
	OR		OR	
	(95% CI) p-value		(95% CI) p-value	
	Female	Males	Female	Male
<b><i>Relationship variables</i></b>				
Trust	3.80 (1.50 - 9.61)**	0.88 (0.47 - 1.63)	1.15 (0.21 - 6.29)	0.84 (0.39 - 1.81)
Commitment	1.97 (0.55 - 7.06)	2.14 (0.75 - 6.05)	5.32 (0.51 - 55.40)	1.67 (0.46 - 6.00)
Investments	0.92 (0.38 - 2.26)	0.95 (0.48 - 1.88)	0.06 (0.01 - 0.33)**	0.61 (0.23 - 1.64)
Level of other alternatives	1.42 (0.70 - 2.90)	0.86 (0.51 - 1.43)	3.86 (0.90 - 16.45)	0.88 (0.47 - 1.66)
Underbenefiting	3.06 (0.32 - 29.42)	2.16 (0.67 - 7.02)	0.00 (0.00 - 1.82)	1.27 (0.28 - 5.87)
Overbenefiting	1.39 (0.22 - 8.59)	0.37 (0.07 - 2.06)	0.66 (0.02 - 18.22)	0.18 (0.01 - 2.52)
Satisfaction	0.91 (0.35 - 2.38)	0.78 (0.41 - 1.50)	1.70 (0.24 - 11.99)	0.69 (0.29 - 1.61)
Self-Verification	0.68 (0.26 - 1.77)	0.97 (0.46 - 2.06)	8.62 (1.02 - 73.08)*	1.33 (0.50 - 3.56)
Multiple partners in past year				
No (reference)	1.00	1.00	1.00	1.00
Yes	3.09 (1.30 - 7.31)*	0.67 (0.37 - 1.21)	0.83 (0.14 - 5.04)	0.50 (0.22 - 1.17)
Marital status				
Single (reference)			1.00	1.00
Married			3.47 (0.40 - 29.96)	3.43 (1.13 - 10.38)*
<b><i>Self-feelings</i></b>				
Self-esteem	0.61 (0.18 - 2.03)	1.16 (0.47 - 2.81)	0.42 (0.05 - 3.59)	2.13 (0.64 - 7.11)
Mastery	1.02 (0.44 - 2.35)	0.88 (0.51 - 1.54)	4.08 (0.69 - 24.07)	0.71 (0.33 - 1.50)
Depression	1.16 (0.46 - 2.88)	2.22 (1.00 - 4.94)	2.02 (0.37 - 11.04)	1.06 (0.38 - 2.95)
Distress	0.79 (0.37 - 1.68)	0.71 (0.44 - 1.15)	0.37 (0.11 - 1.17)	0.89 (0.49 - 1.62)
<b><i>AIDS specific measures</i></b>				
Positive beliefs about condoms	0.94 (0.30 - 2.90)	1.03 (0.45 - 2.38)	0.82 (0.11 - 6.42)	0.89 (0.32 - 2.49)

<sup>54</sup> Note: consistent use for females 4 failures and 0 successes completely determined.

	Condom use in last sex among unmarried youth		Consistent condom use in non-marital sex <sup>54</sup>	
	OR		OR	
	(95% CI) p-value		(95% CI) p-value	
	Female	Males	Female	Male
Condom use self- efficacy	0.33 (0.17 - 0.63)**	0.26 (0.13 - 0.49)**	0.21 (0.06 - 0.75)*	0.23 (0.08 - 0.69)**
AIDS prevention knowledge	1.43 (0.98 - 2.09)	1.04 (0.82 - 1.32)	0.47 (0.24 - 0.91)*	0.97 (0.72 - 1.31)
Internal AIDS prevention locus of control	1.31 (0.79 - 2.17)	1.36 (0.93 - 1.99)	0.84 (0.34 - 2.04)	1.63 (1.01 - 2.61)*
Risk perception	1.18 (0.85 - 1.64)	0.87 (0.69 - 1.09)	0.99 (0.57 - 1.71)	0.71 (0.53 - 0.95)*
<i>Controls:</i>				
Aged 15 to 19 (reference)	1.00	1.00	1.00	1.00
Aged 20 to 24	0.45 (0.20 - 1.05)	0.73 (0.39 - 1.36)	0.42 (0.10 - 1.73)	1.41 (0.59 - 3.42)
Socioeconomic status				
Low	0.66 (0.26 - 1.66)	0.63 (0.31 - 1.27)	0.19 (0.02 - 1.79)	1.16 (0.50 - 2.72)
Medium (reference)	1.00	1.00	1.00	1.00
High	2.29 (0.63 - 8.27)	0.71 (0.34 - 1.50)	0.65 (0.11 - 4.03)	0.54 (0.20 - 1.44)
Level of education				
None	1.16 (0.37 - 3.67)	0.92 (0.40 - 2.11)	1.15 (0.15 - 8.90)	0.29 (0.06 - 1.42)
Medium (reference)	1.00	1.00	1.00	1.00
High	1.6 (0.55 - 4.67)	1.55 (0.76 - 3.16)	1.17 (0.24 - 5.58)	1.04 (0.42 - 2.59)
Residence				
Rural area (reference)	1.00	1.00	1.00	1.00
Urban area	1.44 (0.43 - 4.81)	2.44 (1.03 - 5.77)*	3.86 (0.72 - 20.76)	0.90 (0.30 - 2.72)
Religion				
Christian/other (reference)	1.00	1.00	1.00	1.00
Muslim	2.41 (0.91 - 6.40)	0.84 (0.43 - 1.66)	0.28 (0.05 - 1.74)	0.84 (0.36 - 1.98)
Reported health status	0.86 (0.50 - 1.47)	1.42 (0.99 - 2.04)	1.53 (0.65 - 3.60)	1.39 (0.88 - 2.18)
Total sample size	167	255	203	289

\*\*p<0.01, \* p<0.05 for differences



Table C: Multivariate logistic regressions: odds ratios (OR) and 95% confidence intervals (CI) of youth reporting fidelity to a partner in the past month, past year, and over their lifetime by sociodemographic and control variables for respondents aged 15 to 24 who were in relationships and sexually experienced in Tanzania in 2007

	Reported fidelity				
	past month <sup>55</sup>		past year		over lifetime
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
	Males	Females	Males	Females	Males
<b>Relationship variables</b>					
Trust	0.13 (0.01 - 2.10)	0.81 (0.43 - 1.55)	1.1 (0.66 - 1.84)	1.6 (0.83 - 3.08)	0.53 (0.22 - 1.30)
Commitment	58.56 (1.91 - 1,795.43)*	0.49 (0.19 - 1.24)	1.48 (0.66 - 3.32)	0.51 (0.20 - 1.28)	1.29 (0.29 - 5.67)
Investments	2.3 (0.14 - 37.37)	1.22 (0.65 - 2.30)	1.5 (0.83 - 2.73)	0.77 (0.41 - 1.45)	1.63 (0.52 - 5.09)
Level of other alternatives	0.35 (0.08 - 1.44)	0.49 (0.30 - 0.78)**	0.76 (0.51 - 1.12)	0.87 (0.57 - 1.34)	0.36 (0.17 - 0.76)**
Underbenefiting	1.21 (0.11 - 13.53)	2.21 (0.44 - 11.01)	1.63 (0.65 - 4.07)	0.58 (0.14 - 2.36)	1.59 (0.30 - 8.38)
Overbenefiting	0.04 (0.00 - 34.59)	1.49 (0.42 - 5.32)	2.04 (0.47 - 8.88)	0.23 (0.07 - 0.76)*	0.15 (0.00 - 7.94)
Satisfaction	0.92 (0.12 - 6.93)	0.87 (0.45 - 1.71)	0.81 (0.47 - 1.39)	0.83 (0.42 - 1.65)	0.87 (0.32 - 2.33)
Self-Verification	1.23 (0.17 - 9.08)	1.11 (0.58 - 2.12)	1.76 (0.97 - 3.19)	2.36 (1.23 - 4.54)**	0.8 (0.29 - 2.16)
Marital Status					
Single (reference)		1.00	1.00	1.00	1.00
Married		3.89 (2.04 - 7.42)**	1.03 (0.58 - 1.82)	2.03 (1.12 - 3.71)*	1.68 (0.54 - 5.18)
<b>Self-feelings</b>					
Self-esteem	1.60 (0.10 - 24.50)	0.44 (0.19 - 1.02)	0.82 (0.39 - 1.70)	0.78 (0.34 - 1.79)	1.22 (0.30 - 4.99)
Mastery	1.01 (0.16 - 6.26)	1.07 (0.61 - 1.87)	1.11 (0.70 - 1.77)	0.85 (0.50 - 1.44)	0.56 (0.23 - 1.36)
Depression	1.08 (0.11 - 10.21)	0.49 (0.26 - 0.93)*	0.76 (0.40 - 1.42)	0.56 (0.30 - 1.04)	0.76 (0.23 - 2.58)
Distress	1.4 (0.46 - 4.21)	1.24 (0.79 - 1.95)	0.99 (0.69 - 1.42)	1.07 (0.71 - 1.61)	0.89 (0.47 - 1.72)
<b>AIDS specific measures</b>					
Fidelity self-efficacy	1.77 (0.77 - 4.07)	1.41 (1.07 - 1.85)*	1.41 (1.08 - 1.82)*	1.30 (1.02 - 1.66)*	1.46 (0.96 - 2.22)
Pressure to have sex	1.80 (0.70 - 4.61)	1.36 (0.78 - 2.37)	1.28 (0.83 - 1.98)	1.61 (1.00 - 2.59)*	1.92 (0.98 - 3.78)
Relationship emotional support	1.51 (0.46 - 4.95)	0.83 (0.51 - 1.34)	0.99 (0.69 - 1.43)	1.23 (0.79 - 1.94)	0.85 (0.43 - 1.65)
AIDS prevention knowledge	1.32 (0.76 - 2.32)	1.02 (0.81 - 1.28)	1.14 (0.94 - 1.37)	1.01 (0.82 - 1.25)	1.13 (0.80 - 1.60)

<sup>55</sup> Females are not shown--of the 125, 6 failures and 111 successes completely determined.

	Reported fidelity				
	past month <sup>55</sup>	past year		over lifetime	
	OR (95% CI)	OR (95% CI)		OR (95% CI)	
	Males	Females	Males	Females	Males
Internal AIDS prevention locus of control	0.94 (0.42 - 2.09)	1.02 (0.72 - 1.44)	0.88 (0.65 - 1.19)	1.10 (0.81 - 1.51)	0.57 (0.33 - 0.99)*
Risk perception	0.96 (0.56 - 1.64)	1.09 (0.87 - 1.37)	0.99 (0.82 - 1.19)	1.20 (0.97 - 1.48)	0.98 (0.71 - 1.36)
<i>Controls:</i>					
Aged 15 to 19 (reference)	1.00	1.00	1.00	1.00	1.00
Aged 20 to 24		0.55 (0.29 - 1.03)	0.44 (0.25 - 0.79)**	0.14 (0.07 - 0.27)**	0.07 (0.02 - 0.23)**
<i>Socioeconomic status</i>					
Low	1.74 (0.31 - 9.83)	1.46 (0.79 - 2.69)	0.75 (0.44 - 1.29)	0.74 (0.42 - 1.30)	2.00 (0.73 - 5.44)
Medium (reference)	1.00	1.00	1.00	1.00	1.00
High	- 18.38 (1.32 - 255.66)*	- 1.16 (0.52 - 2.58)	- 1.12 (0.61 - 2.06)	- 0.87 (0.39 - 1.94)	- 4.16 (1.38 - 12.55)*
<i>Level of education</i>					
None	8.38 (0.27 - 260.25)	0.64 (0.32 - 1.29)	1.35 (0.71 - 2.56)	1.32 (0.69 - 2.54)	0.97 (0.28 - 3.38)
Medium (reference)	1.00	1.00	1.00	1.00	1.00
High	0.12 (0.00 - 4.15)	1.13 (0.51 - 2.51)	1.06 (0.57 - 1.96)	0.62 (0.28 - 1.37)	1.27 (0.44 - 3.71)
<i>Residence</i>					
Rural area (reference)	1.00	1.00	1.00	1.00	1.00
Urban area	0.30 (0.04 - 2.23)	0.44 (0.20 - 0.98)*	0.67 (0.35 - 1.31)	0.59 (0.26 - 1.32)	0.70 (0.21 - 2.41)
<i>Religion</i>					
Christian/other (reference)	1.00	1.00	1.00	1.00	1.00
Muslim	0.45 (0.09 - 2.26)	1.17 (0.62 - 2.20)	0.44 (0.26 - 0.76)**	0.87 (0.47 - 1.60)	0.42 (0.16 - 1.12)
<i>Reported health status</i>					
Age at first sex	1.53 (0.63 - 3.70)	1.04 (0.75 - 1.45)	0.93 (0.70 - 1.24)	0.85 (0.62 - 1.17)	1.02 (0.61 - 1.72)
Total sample size	86	408	371	408	371

\*\*p<0.01, \* p<0.05 for differences

## Glossary

**AIDS prevention knowledge:** Knowledge of HIV transmission was measured by the number of correct answers to ten statements about AIDS prevention.

**AIDS prevention locus of control:** the respondent's perception as to whether AIDS prevention is within their control.

**AIDS risk perception:** The respondent's self-evaluation of their risk for HIV relative to most people

**Alternatives to relationship:** the individual's perception of the quality and likelihood of alternative means of having various needs fulfilled and the quality and likelihood of alternative partners

**Commitment:** an allegiance, or binding tie to another that prevents seeking out more advantageous relations (Leik & Leik; Burke & Stets; Rusbult et al)

**Condom use self-efficacy:** the respondent's perceived ability to enact tasks related to condom use.

**Depression:** DSM-4 affective or mood symptoms include depressed mood and feelings of worthlessness or guilt. Behavioral symptoms include social withdrawal and agitation. Cognitive symptoms, or problems in thinking include difficulty with concentration or making decisions. Finally, somatic or physical symptoms include insomnia or hypersomnia.

**Distress:** "uncomfortable subjective states... 3 main forms of distress: Malaise, anxiety,, depression" (Mirowsky & Ross 1995, 24)- stress and frustration manifest as distress (Mirowsky & Ross 1995)

**Equity:** the individual's perception of their contributions and rewards compared with those of their partner

**Fidelity self-efficacy:** the respondent's perceived ability to remain faithful.

**Investments:** resources in a relationship that individuals either would lose if the relationship ended or that they would find difficult to replace

**Mastery:** feeling that outcomes are within one's personal control

**Perceived pressure to have sex:** the extent to which the respondent generally feels pressure that there is pressure to be sexually active.

**Positive condom perceptions:** Includes positive condom norms, beliefs about condoms, instrumental support for condom use, and social support for condom use

**Relationship emotional support:** the social support that the respondent feels that they have from various members of their community.

**Satisfaction:** Refers to satisfaction with a partner's fulfillment of one's needs

**Self-esteem:** is a positive or negative orientation toward oneself; an overall evaluation of one's worth or value-feeling good about one's self

**Self-verification:** When another person confirms an individual's self view

**Trust:** "the expectation that a partner will behave benignly with good intent" (Molm et al. 2000: 1402).

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