



AMERICAN UNIVERSITY OF BEIRUT

PREDICTORS OF HOMONEGATIVITY IN A SAMPLE OF  
LEBANESE STUDENTS

by  
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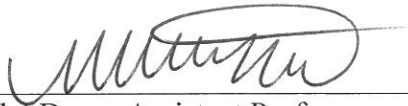
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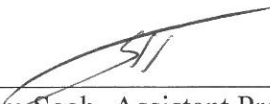
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## AN ABSTRACT OF THE THESIS OF

Mona Akra for Master of Arts  
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Homonegativity has been investigated frequently in the literature concerned with lesbians and gay men. Homonegativity is defined as the negative attitudes towards lesbians and gay men. Predictors of such attitudes that have been examined most often include contact with lesbians and gay men, religiosity, gender and gender role beliefs, and, to a lesser extent, openness. In an attempt to address some of the limitations in the literature, such as not controlling for social desirability in most studies, and to offer what seems to be the first examination of attitudes towards lesbians and gay men in Lebanon, this study investigated the predictors of homonegativity in a holistic manner. The holistic framework included social variables (contact with lesbians and gay men), gender variables (gender, gender role beliefs), faith variables (private religious practice, public religious practice, and religious/spiritual experiences), individual-difference variables (openness), and variables that might bias the model (age, year at university, household income). The final sample included 281 participants recruited from the Psychology Research Pool. An exploratory factor analysis indicated that the dimensions of religiosity formed one coherent construct in this sample, and that contact also formed one construct. Findings indicated that contact with lesbians and gay men to be a negative predictor of homonegativity, and traditional gender role beliefs, and overall religiosity to be positive predictors of homonegativity. Being male, private religious practice, public religious practice, religious/spiritual experiences were positive correlates of homonegativity, and openness and household income were negative correlates of homonegativity. Contrary to our expectations age, and year at university were neither correlates nor predictors of homonegativity. The interpretations of the findings and the limitations of the study are further discussed.

# CONTENTS

ACKNOWLEDGEMENTS .....	v
ABSTRACT.....	vi
LIST OF ILLUSTRATIONS.....	xii
LIST OF TABLES.....	xiii

## Chapter

I. INTRODUCTION.....	1
II. FACTORS ASSOCIATED WITH HOMONEGATIVITY	6
A. Social Variables: Contact With Lesbians and Gay Men.....	6
B. Gender-Related Variables.....	8
1. Gender .....	8
2. Gender Role Beliefs .....	9
C. Faith-Related Variables: Religiosity.....	11
1. Private Religious Practice.....	11
2. Public Religious Practice.....	13
3. Religious Experience/Spirituality.....	14
D. Individual Differences: Openness to Experience.....	15
E. Eliminating Bias: Factors that Influence the Model.....	16
1. Social Desirability.....	16
2. Age, Level of Education, and Household Income.....	17
III. THE CASE OF LEBANON.....	19

IV. AIMS AND HYPOTHESES.....	22
A. Aims.....	22
B. Hypotheses.....	23
V. METHODOLOGY.....	26
A. Format of the Survey .....	26
B. Measures.....	26
1. Demographics Questionnaire.....	26
2. Contact with a Lesbian or Gay Person.....	26
3. Attitudes towards Lesbians and Gay Men .....	27
4. Gender Role Beliefs Scale.....	28
5. Centrality of Religiosity Scale.....	29
6. Openness to Experience Subscale (Big 5 Inventory).....	29
7. Short Forms Marlowe-Crowne Social Desirability Scale.....	30
C. Pilot Study.....	30
D. Main Study.....	31
1. Procedure and Data Collection.....	31
2. Order Effects and Counterbalancing.....	32
3. Sample Characteristics and Demographics.....	32
VI. RESULTS.....	34
A. Preliminary Analysis.....	34
1. Missing Value Analysis.....	34
2. Univariate Outliers, Multivariate Outliers, Influential Cases.....	34
B. Assumptions of ANOVA Analyses.....	34
1. Level of Measurement of the Dependent Variable.....	35
2. Normality of Homonegativity.....	35



C. Assumptions of Regression and ANOVA Analyses.....	35
1. Ratio of Cases to Independent Variables.....	35
2. Normality of Predictor Variables and Homonegativity.....	35
3. Multicollinearity.....	36
4. Independence of Errors.....	36
5. Normality of Residuals.....	36
6. Homoscedasticity of Regression Slope.....	36
D. Order Effects.....	37
E. Exploratory Factor Analysis of Contact with Lesbians & Gay Men	37
F. Exploratory Factor Analysis of Centrality of Religiosity Scale.....	38
G. Correlation between Predictor Variables and Homonegativity.....	39
H. Regression Analysis: Predictors of Homonegativity.....	40
<b>VII. DISCUSSION.....</b>	<b>43</b>
A. Interpretation of the Findings.....	43
B. Limitations and Future Directions.....	48
C. Implications.....	50
D. Conclusion.....	51
<b>REFERENCES.....</b>	<b>53</b>
<b>APPENDICES A – H .....</b>	<b>64</b>

## TABLES

1.	Reliability of the Scales and Subscales.....	77
2.	Demographic Information of Participants.....	78
3.	Descriptive Statistics .....	79
4.	Zero Order Correlation Matrix.....	80
5.	R, R Square, Adjusted R Square.....	81
6.	Regression Parameters.....	82

## FIGURES

1. Histogram of Standardized Residuals.....	83
2. Normal P-P Plot.....	84
3. Scatterplot.....	85

# CHAPTER I

## INTRODUCTION

Homosexuality can be conceptualized with three components, same-sex attraction, same-sex behavior, and gay or lesbian sexual identification (Savin-Williams, 2006). According to Savin-Williams (2006), same-sex attraction is the romantic attraction of women to other women, or of men to other men. Same-sex behavior is defined as sexual experiences between people of the same sex, and sexual identification is the self-classification with a lesbian or gay sexual orientation.

Homosexuality was removed from the Diagnostic and Statistical Manual of Mental Disorders (DSM) in 1973 and was no longer considered a mental illness after years of theories emerging on homosexuality. A shift from religious to scientific understanding of behavior occurred in the 19<sup>th</sup> century, which resulted in the classification of “homosexuality” as a mental disorder, widely replacing the term “sodomy” (Drescher, 2012; Zachary, 2001). This classification was popularized by German psychiatrist Richard von Krafft-Ebing who wrote about homosexuality in the context of sexual disorders (Drescher, 2012).

Sigmund Freud posited an alternative theory, suggesting that homosexuality is a normal developmental milestone, and that adult homosexuals would be stuck at that developmental stage, rather than mentally ill (Drescher, 2012). According to Zachary (2001) and Drescher (2012), psychoanalysts after Freud’s death in 1939 disagreed, however, and continued to consider homosexuality a neurotic illness. It was widely believed that homosexuality was a form of avoidant anxiety towards the opposite sex,

and often even seeing lesbians and gay men as less developed, narcissistic, and perverse (Drescher, 2012).

Since the mid-19<sup>th</sup> century, however, theories in favor of the normality of homosexuality increasingly emerged. According to Drescher (2012), Alfred Kinsey was one of the first pioneers of this perspective; he found that the prevalence of homosexuality was quite high, with 10-35% of individuals he questioned to have at least one homosexual experience in adulthood. According to Kinsey, homosexuality could not be an abnormality if its occurrence is so high. Following this, a study showed that there was no difference in psychopathology between heterosexual and homosexual individuals (Drescher, 2012).

According to Drescher (2012), Kinsey's and the psychoanalytic perspectives were in disagreement until this point. National activism by lesbian and gay activism was effective in getting the attention of the APA with regard to this matter as they disrupted a panel meeting in 1970. They got the chance to express themselves as nonpatient homosexuals in 1971, explaining how the diagnosis affected their daily lives. They organized another panel in 1972, where a gay psychiatrist named Dr. Fryer anonymously spoke about homosexuality. Following this in 1972, the APA voted for removing homosexuality from the DSM, considering that the view that homosexuality was not a mental illness carried more scientific evidence than the opposing view.

After this turning point, acceptance of lesbians and gay men began to increase slowly in the United States (Zachary, 2001; Drescher, 2012). Yet, conversion therapies, whose goal was to change one's sexual orientation, continued to be practiced after the removal of homosexuality from the DSM (Haldeman, 1991). Nowadays lesbians and gay men have the right to get married in many countries, including some countries in

Europe, and the United States (Drescher, 2012). In the guidelines by the American Psychological Association (2000) for psychotherapists who practice therapy with clients identifying as lesbian, gay, or bisexual, distinctions in sexual orientation are not to be considered a deficit or abnormality.

### **Homonegativity**

The term homonegativity was coined by Hudson and Ricketts (1980) as they depicted that terms like “homophobia” and “anti-homosexuality” were inadequate in describing negative attitudes towards lesbians and gay men. The term “homophobia” was originally used to describe the aversion of being in close proximity to homosexual persons. In subsequent studies, however, it was used to measure negative attitudes in general towards lesbians and gay men. The newer term “homonegativity”, which is defined as the negative attitudes towards lesbians and gay men, would include both the aversion of being in close proximity to them as well as the fear and disgust people may experience when dealing with them. In contemporary research the term “homonegativity” is used interchangeably with “attitudes towards lesbians and gay men” and with “sexual prejudice” (e.g. Marsh & Brown, 2011; Rowniak, 2015; Smith, Axelson, & Saucier, 2009).

Lesbians and gay men may experience psychological distress because of negative attitudes towards them from society (Gonsiorek & Weinrich, 1991). Particularly the youth face discrimination because of their sexual orientation, which can lead to adverse psychological effects, such as depression and suicidality (Lebson, 2002). A study by Feinstein, Goldfried, and Davila (2012) demonstrated that negative attitudes towards lesbians and gay men can often lead to internalized homonegativity, that is feeling negative about one's sexual orientation, and thus to future psychological distress.

Additionally, a study in Lebanon by Michli (2016) found negative parental attitudes, legal discrimination, and religiosity to be predictors of internalized homonegativity. Societal and religious factors thus played a significant role in explaining internalized homonegativity.

It is for this reason that it is important to investigate what drives people to have such negative attitudes towards sexual minorities. Clinically, it would help lesbians and gay men in therapy to understand that the negative attitudes would not imply that there is something fundamentally wrong with them, but focus more on the social and personality factors involved in homonegativity towards them. Additionally, investigating the factors that would lead to negative attitudes towards lesbians and gay men could aid professionals in taking steps to lift these discriminatory attitudes and produce social change.

While homonegativity is declining in Western countries like the United States, Germany, and Sweden, it remains prevalent in eastern countries like Lebanon (Khalaf & Gagnon, 2006) and Turkey (Jäckle & Wenzelburger, 2014). Several predictors of homonegativity have been identified in the literature. More contact with lesbians and gay men is associated with less homonegativity (Smith et al., 2009). Moreover, being male and having rigid gender role beliefs (Costa & Davies, 2012), and being more religious and less spiritual (Harbaugh & Lindsey, 2015) have been associated with increased homonegativity in some studies. Openness to experience is arguably an important predictor also, however studies on this variable have been inconclusive.

In the current study, as in most recent research, the terms homonegativity and negative attitudes towards lesbians and gay men will be used interchangeably.

Additionally, we will be using the terms “lesbians and gay men”, as is advised by the

lesbian, gay, bisexual, transgender and queer (LGBTQ) advocacy “GLAAD”; the advocacy explains that using the term “homosexual” is offensive and to be avoided, and one should rather say “lesbian” and “gay man” instead (GLAAD Media Reference Guide, 2016).

The next section will explore contact with lesbians and gay men, gender, gender role beliefs, private religiosity, public religiosity, religious experiences, openness to experience as predictors of homonegativity and will also briefly discuss social desirability, age, educational level, and household income as variables that could bias the study. These predictors in particular were chosen because, while they have been studied individually, they have never been investigated holistically under one framework. We chose these variables under a holistic framework including social variables (contact with lesbians and gay men), gender variables (gender, gender role beliefs), faith variables (private religious practice, public religious practice, and religious/spiritual experiences), individual differences variables (openness), and variables that might bias the model (social desirability, age, year at university, household income). The outcome variable included homonegativity, that is, attitudes towards only gay men and lesbians; while bisexual and transgender individuals are covered in some parts of the sections for thoroughness purposes, investigating attitudes towards bisexual and transgender individuals exceeds the scope of the present study.



## CHAPTER II

### FACTORS ASSOCIATED WITH HOMONEGATIVITY

#### **A. Social Variables: Contact with Lesbians and Gay Men**

Intergroup Contact Theory suggests that contact between groups in conflict is likely to reduce prejudice among these groups (Allport, 1954). According to Pettigrew (2008) the theory was originally developed for groups of different ethnicities, races, religions, and cultural groups, and has recently been applied to other groups prone to be stigmatized, such as homeless individuals, and individuals with mental and physical disabilities, and sexual minority groups. Research suggests that contact among groups in conflict reduces fears and perceived threats, which then leads to less prejudiced attitudes (as reviewed in Pettigrew, 2008).

Smith et al. (2009) conducted a meta-analysis of 41 studies to examine the relation between contact with gay men and lesbians and sexual prejudice. In the studies they examined, contact was usually defined as knowing at least one lesbian or gay person personally, or having a homosexual family member. Prejudice was usually defined as negative attitudes towards lesbians and gay men. Smith et al. (2009) found a significant negative relation between the two variables; the more contact with sexual minority groups, the less the prejudice against them. Both correlational and experimental designs were effective in showing this relation between the two variables. Examples of experimental studies include assessing participants' prejudice after having contact with a lesbian or gay person. Smith et al. (2009) stressed that no prior study examined quality of contact and encouraged future studies to do so.

These findings were confirmed by subsequent studies (Costa & Davies, 2012; King, Winter, & Webster, 2009; Rowniak, 2015; Woodford, Silverschanz, Swank, Scherrer, & Raiz, 2012). Woodford et al. (2012) investigated attitudes of heterosexual students towards the LGBT community. Their sample consisted of 11,342 sophomore and junior undergraduates, and 8,000 randomly selected graduate students. They found that the general attitude towards the LGBT community was only somewhat supporting, with 14% of their sample having negative attitudes. Having lesbians, gay men, and bisexuals as friends and family members was also shown to predict positive attitudes towards lesbian, gay, and bisexual people. This was not the case for attitudes towards transgender people, however, which could be because few participants had a transgender family member in that sample (Woodford et al., 2012). For example, Woodford et al. (2012) and Costa and Davis (2012) found that knowing lesbian, gay, or bisexual individuals predicted a favorable attitude towards LGBT individuals. This was not the case for knowing transgender individuals, however. Similarly, Costa and Davies explained this by pointing out that the sample possibly had few or no transgender acquaintances. King, Winter, and Webster (2009) accounted for this limitation; they found that contact with transgender and transsexual individuals strongly correlated with positive attitudes towards them. Contact was predictive of less social distancing and discrimination, and more awareness about transgender-related issues (King et al., 2009).

Additionally, Fingerhut (2011) found that contact was predictive of LGBT alliance, possibly because of recategorization. Contact and the breaking of barriers between the LGBT people and heterosexuals might create a new group in which members of the LGBT community and their allies are “gay rights supporters”. These findings were replicated in different samples; Satcher and Schumacker (2009) found

that professional counselors had more negative attitudes towards lesbians and gay men when they did not know any lesbians or gay men. Moreover, Hilton and Szymanski (2014) reported that siblings of lesbians and gay men were more likely to react with shock to the news that their sibling is a gay man or lesbian if they had less contact with lesbians and gay men before. Additionally, it appears that having a lesbian or gay sibling leads to general acceptance and comfort towards same-sex marriage and homosexuality as a whole (Hilton & Szymanski, 2014).

In sum, it appears that more contact with lesbians and gay men is associated with less homonegativity. One major limitation in the previously reviewed studies was that they tended to measure contact using only one to two questions, and usually defined contact merely as having a gay or lesbian friend/family member. To our knowledge, no study did so with regard to quality of contact.

## **B. Gender-Related Variables**

**1. Gender.** While the majority of studies found men to be more homonegative than women, some did not find significant differences. Meaney (2010) did not find a difference between men's and women's attitudes towards lesbians and gay men. Similarly, Rowniak (2015) did not find an association between being male and being homophobic, and Satcher and Schumacker (2009) found gender to be unrelated to homonegativity. Additionally, in a study by Moskowitz, Rieger, & Roloff (2010), there were no significant differences between men and women in attitudes towards same-sex marriage when homonegativity was controlled for, suggesting that homonegativity was a mediator between gender and attitudes towards same-sex marriage.

Most research studies, however, have consistently found that women tend to have more positive attitudes than men towards the LGBT community (Bowers,

Lewandowski, Savage, & Woitaszewski, 2015; Costa & Davies, 2012; Cragun & Sumerau, 2014; Grigoropoulos & Kordoutis, 2015; Holland, Matthews, & Schott, 2013; Jenkins, Lambert, & Baker, 2009; Plugge-Foust & Strickland, 2000; Swank, Woodford, & Lim, 2013; Woodford et al., 2012). Costa & Davies (2012) similarly found that men are more likely than women to discriminate between lesbians and gay men, and more so against gay men than against lesbians. Additionally, another study found equal amounts of homophobia in Black and White men, indicating no difference among men of different races (Jenkins et al., 2009).

In sum, most studies appear to find men to be more homonegative than women. It could be the case that this is because men tend to adhere to more traditional gender role beliefs, examined in the next section.

**2. Gender Role Beliefs.** Gender role ideology pertains to the beliefs about the behavior of men and women; this serves as an important concept in understanding feminism, gender roles, and similar areas (Kerr & Holden, 1996). The traditional or rigid gender role perspective considers men to be providers and the dominant authority, while women's roles are limited to being mothers and housewives. This perspective suggests that there are fundamental differences between men and women. The feminist gender role perspective, however, suggests that differences between men and women are socially constructed, and that men and women should be principally equal. Traditional gender role beliefs have been found to be correlated with negative attitudes towards lesbians and gay men (Costa & Davies, 2012; McDermott, Schwartz, Lindley, & Proietti, 2014). Particularly, it appears that men tend to be more homonegative and discriminatory against lesbians and gay men because of their stricter adherence to expected societal gender roles (McDermott et al., 2014).

Hirai, Winkel, and Popan (2014) investigated the role of machismo in predicting homonegativity in a sample of Latino college students. They defined machismo as having rigid beliefs on gender roles, having dominance and control over women, as well as having a sense of familial responsibility. Findings showed that men had significantly higher scores on the machismo scale than women, meaning that on average, men had more traditional gender beliefs than women. Additionally, both men and women with higher machismo levels had more negative attitudes towards lesbians and gay men (Hirai et al., 2014).

Costa and Davies (2012) investigated genderism and gender role beliefs in relation to homophobia and transphobia. They defined genderism as heteronormative standards set by society; non-conformism to such standards would then be punishable by the same society. They found that both genderism and rigid gender role beliefs were related to negative attitudes towards lesbians, gay men, and transgender people. Costa and Davies (2012) suggested that society builds the norm to be heterosexuality, which is part of behaving according to one's gender. Being gay or lesbian would then mean that one is behaving outside the expected gender role, which might lead to negative attitudes from society. The less prejudiced attitudes towards lesbians would then be justified as women in general are given more freedom in gender expression than men (Costa & Davies, 2012).

McDermott et al. (2014) also found that men with gender role conflict, that is men who strictly abide by behaviors and thoughts tied to the traditional male role, tend to be more homonegative. This was the case independent of religious fundamentalism. McDermott et al. drew on gender role conflict theory to justify their result; they suggested that such men might have a fear of being perceived as gay themselves if they

did not adhere strictly to the expected gender roles. Such men, for example, do not like to show their feelings or appear as sensitive or feminine, and expressed high levels of homophobia (McDermott et al., 2014).

Similarly, Moskowitz et al. (2010) investigated attitudes towards same-sex marriage, and found that men were more likely to have negative attitudes towards it, especially towards gay marriage. Like McDermott et al. (2014), Moskowitz et al. (2010) suggested that this could be because of the violation of societal gender norms. Additionally, they proposed that heterosexual men might find lesbians erotic and arousing, leading to more tolerant attitudes towards them than towards gay men. In conclusion, most research appears to find traditional gender role beliefs to be associated with more homonegativity.

### **C. Faith-Related Variables: Religiosity**

Huber and Huber (2012) differentiated between dimensions of religiosity, including private practice, public practice, and religious experiences. They defined private practice as one's personal devotion to a god or divine being, characterized by private, personal prayer or meditation. Public practice is characterized by external participation in religious communities, religious services and public prayer services, such as Christian mass or Islamic Friday prayers. Huber and Huber (2012) additionally distinguish between private practice and religious experiences, where individuals have spiritual or transcendent connections with a god or a higher power.

**1. Private religious practice.** Findings on the relation between private practice and homonegativity are mixed. On the one hand, a study by Harbaugh and Lindsey (2015) investigated the relation between private religiosity, defined in that study as non-organizational, and informal religiosity. They investigated whether private religious

practices such as praying outside of religious institutions like churches were tied to homonegativity. They found that private religiosity was significantly tied to high homonegativity levels. Similarly, Blogowska, Saroglou, and Lambert (2013) conducted an experiment testing the relation between intrinsic or private religiosity and aggression towards gay people. The sample consisted of mostly Christian participants. In their experiment, participants could choose to allocate hot sauce, which was provided to them to give to a person in the experimental group. The amount of hot sauce allocated in grams served as the dependent variable and as a measure of aggression, next to a self-report measure of aggression. Results showed that privately religious people were more likely to allocate hot sauce to the gay person, but showed no correlation with self-reported aggression. This means that privately religious people did not report aggression towards the gay person, even though they gave them more hot sauce. Blogowska et al. (2013) argued, however, that the hot sauce allocation method might have been a limitation in measuring aggression, as it might not have been considered as harmful by the participant.

On the other hand, a study by Veenvliet (2008) found that religious individuals who practice their religion privately or intrinsically were more likely to have tolerant and accepting attitudes towards lesbians and gay men. They suggested that this was because internally religious people distinguish between the person and the behavior (what they might consider morally wrong). The application of the religious teaching of “hating the sin, but not the sinner” is relevant here; individuals with private religiosity who practiced this statement tended to have positive attitudes towards lesbians and gay men. This is consistent with Jäckle and Wenzelburger's (2015) findings from a multilevel-analysis of 79 countries. They examined the relation between religiosity and

homonegativity and found that while religiosity in general was linked to higher levels of homonegativity, this was not the case for individuals who practice their religion privately.

In conclusion, research on private religiosity has yielded mixed findings. Most research, however, appears to have found a negative relation between private religiosity and homonegativity.

**2. Public religious practice.** A number of studies have been conducted on the relation between public practice and homonegativity, with most studies indicating that there was a strong positive correlation between them. Rainey and Trusty (2007) examined predictors of homonegativity, including religiosity, among Master's-level counseling students. The type of religiosity measured was public religiosity; participants were asked how important religiosity was among their peers and how important public religious services, like church attendance, were for them. They found religiosity to be moderately related to homonegativity.

Morrison and Morrison (2011) also investigated religiosity as a predictor of homonegativity. Religiosity was defined as religious service, which is a public type of religious practice. Consistent with the findings of Rainey and Trusty (2007), they found that more religious services were related to homonegativity.

Roeder and Lubbers (2015) investigated homonegativity among immigrants in Europe. Religiosity was defined in that study as religious attendance, which is a form of public practice. Results suggested that engaging in more such practice was related to high homonegativity levels. This was explained only in part by cultural influence; that is, their countries of origin have less cultural support for homosexuality, which partly explained higher homonegativity levels. For Muslims, second-generation immigrants



were as homonegative as their first-generation parents; in that study religiosity was the strongest predictor of homonegativity, regardless of how much time had already been spent in the European country. In their multilevel-analysis, Jäckle and Wenzelburger (2015) also found that individuals with external or public practice of religiosity were likely to be homonegative. A multi-level analysis of 43 European countries by Doebler (2015) confirmed these findings; religious practice, for example going to church, was indeed significantly positively related to homonegativity.

In sum, public religiosity appears to be positively related to homonegativity. It is possible that religiosity is related to homonegativity because most conservative interpretations of Islam and Christianity consider homosexuality to be a sin (Eidhamar, 2014; Lapinski & McKirnan, 2013).

**3. Religious experience and spirituality.** Harbaugh and Lindsey (2015) found that individuals who were spiritual and practiced their religion in a way to give them meaning were less likely to be homonegative. They suggested that this could be because negative messages about lesbians and gay men in religious circles might not be of significance to them, because they are more concerned with the personal connection to the divine (Harbaugh & Lindsey, 2015).

This was supported by another study that found spiritual individuals to have more tolerant attitudes towards lesbians and gay men when compared to extrinsically religious people (Cragun & Sumerau, 2015). Cragun and Sumerau (2015) suggested that this could be because more and more people are leaving religions particularly because of oppressive laws that oppose LGBT rights; however the same individuals might hold on to teachings that can be separated from religion, such as the interconnectedness of humans and that there might be higher purpose for our existence. In conclusion,

according to the reviewed literature, religious experience or spirituality appears to be negatively related to homonegativity.

#### **D. Individual Differences: Openness to Experience**

Openness is the inquisitiveness about private and external events, and comes in the form of cognitive, intellectual, and creative flexibility (McCrae & Costa, 1987).

Research on the relation between openness and homonegativity is scarce and inconclusive. Only one study investigated openness in the context of contact, gender roles, and religiosity; however it was limited to a male participant pool.

Hirai et al. (2014) found in their study investigating the role of machismo in predicting prejudice against lesbians and gay men that openness was positively correlated with prejudice. Hirai et al. (2014) suggested that this finding is contrary to the common knowledge that openness buffers against negative attitudes towards lesbians and gay men and thus surprising. They suggested that it could be the effect of using a Latino sample, however did not posit an explanation as to why that might lead to different results, or how race might play a role. They also suggested that the nonsignificant result could be because they used different instruments compared to other studies. Hirai et al. (2014) also suggested that openness might predict less prejudice on a holistic level, and not when it is directed at specific groups like lesbians and gay men.

In contrast, Barron, Struckman-Johnson, Quevillon, and Banka (2008) found openness to experience in heterosexual men to significantly predict less prejudice against gay men. Openness had the strongest correlation with prejudice when compared to religiosity, contact with lesbians or gay men, hyper-masculinity, sexism, attitude functions, religiosity, and political views (Barron et al., 2008). Moreover, Cramer et al.

(2013) investigated right wing authoritarianism and openness as predictors of negative attitudes towards lesbians and gay men. They found that less openness predicted more negative attitudes towards lesbians and gay men, and found right wing authoritarianism to be stronger in such participants. Cramer et al. (2013) suggested that these participants might have cognitive closure towards lesbians and gay men as they are unfamiliar with them, which they see as a threat. Miller, Wagner, and Hunt (2012) also found openness, particularly openness to values, to be significantly related to less sexual prejudice.

Miller et al. (2012) suggest that regardless of religion, political views, sexual orientation, gender, and familial beliefs, being ready to reexamine ones values was a strong predictor of less sexual prejudice. It is worth noting, however, that their sample consisted largely of females; the results do not necessarily generalize to men also.

In conclusion, research on openness thus far is limited, but it appears that more openness is related to less homonegativity. Barron et al. (2008) suggest that openness should be considered as a main predictor in future research on sexual prejudice, as it plays a key role in developing views on gender and sexuality. Additionally, Worthen et al. (2012) suggested including openness as a predictor of attitudes towards LGBT individuals.

## **E. Eliminating Bias: Variables that Influence the Model**

**1. Social Desirability.** While unrelated to homonegativity in particular, social desirability bias affects research studies based on self-reports, such as those examined in this literature, and manifests itself differentially across men and women. There appear to be gender differences in social desirability expressions, where women tend to express more social desirability. Self-report scales were used for most of the studies investigating predictors of homonegativity. According to Kazdin (2014), while self-

report measures are useful in directly assessing attitudes, feelings, and perceptions, there is the possibility of bias and misrepresentation on the part of the participants.

Particularly, participants tend to answer items in questionnaires with high social desirability, that is, they change their self-image and interpret items in questionnaires loosely to present themselves in the best possible light. Some individuals tend to be high on need for social desirability and approval; these participants particularly tend to endorse items that are socially desired and accepted.

A study by Dalton and Ortegren (2011) investigated ethical responses by men and women. They found that women endorsed significantly more ethical items than men, however this difference was eliminated when social desirability was controlled for. This is important for this study, considering that most studies found men to be significantly more homonegative than women; it might be that the difference exists due to a social desirability difference.

Only the studies by Moskowitz et al. (2011), Hilton and Szymanski (2014), Pearte et al. (2013), McDermott et al. (2014) accounted for social desirability in their studies by including a social desirability measure. Marsh and Brown (2011) accounted for social desirability by including an implicit attitude test for homonegativity. Jäckle and Wenzelburger (2015) listed that the control for social desirability is missing in most studies investigating homonegativity and pointed it out as a limitation. Considering that most studies did not control for social desirability, and that social desirability could account for the differences between men and women on homonegativity, this study included a social desirability measure to decrease this bias to the extent possible.

**2. Age, Level of Education, and Household Income.** In their multilevel-analysis, Jäckle and Wenzelburger (2015) found that age has been consistently shown to

be related to homonegativity, with older age being positively related to homonegativity. Additionally, a higher level of education has been shown to be less related to homonegativity. Another important variable was household income; more income has been shown to be less related to homonegativity. Because they tend to have effects on homonegativity, these important demographic variables were examined in the current study.

## CHAPTER III

### THE CASE OF LEBANON

Research in Lebanon has been scarce on the topic of sexuality in general, and only a few studies have explored homosexuality. Michli (2016) investigated predictors of internalized homonegativity, and provided a thorough review on homosexuality in the context of Lebanon. Michli (2016) found intrinsic religiosity, negative actual or anticipated parental attitudes, and vigilance (e.g., taking care not to be arrested), to be predictors of homonegativity. Michli (2016) also found that a sense of belonging to the LGBT community was protective against internalized homonegativity. This, according to the author, suggested that internalized homonegativity was not purely explained by personal variables, but also by societal attitudes at large. Michli's (2016) work was a critical, first-of-its-kind examination of sexuality in Lebanon, particularly as it relates to the LGBT community. The topic remains a taboo in many Middle Eastern countries, however, including Lebanon (Salameh et al., 2015).

According to article 534 within the Lebanese Penal Code "intercourse contradicting to nature" is prohibited and punishable by law, and people who practice sex as defined by the article can be imprisoned for a year (Farchichi & Saghiyeh, n.d.). Sexual minorities in Lebanon face violence and discrimination because of this law (Saleh, 2015). According to Kerbage (2014; reviewed in Michli, 2016), this has not always been the case; the French mandate issued this law, with no records before that outlawing homosexuality. Additionally, Habib (2007; reviewed in Michli, 2016) noted that same-sex behaviors were idealized and depicted in literature from places such as Turkey and Persia; medieval texts depicted female same-sex behavior and attraction

were common in Islamic and Middle Eastern cultures, unlike current attitudes which are rather negative.

The organization Helem, which was established in 2004, has been fighting for rights of lesbians, gay men, bisexuals, and transgender individuals with the goal of abolishing this law (Saleh, 2015). It is also worth noting that the Lebanese Psychological Association and the Lebanese Psychiatric Association publically stated that homosexuality is not a disorder and is not to be treated in therapy (Lebanese Psychological Association, 2013). Additionally, a number of court rulings could be viewed as stepping stones towards eradicating the homonegative laws in Lebanon (Benoist, 2014; reviewed in Michli, 2016). In 2014, a Lebanese transgender woman was charged with practicing same-sex intercourse with men. Remarkably, judge Dahdah ruled that gender should not be defined by one's legal document, but according to what one identifies oneself as. Thus, a transgender woman should not be labeled as a man as her documents would specify, but as a woman, which she identifies as (Benoist, 2014; reviewed in Michli, 2016). Activists have applauded the case, and judge Azzi indicated that article 534 does not apply to the LGBT community. Sleiman, another judge, also spoke up in 2009 in favor of the LGBT community in Lebanon by stressing that article 534 does not define "unnatural sexual relations" and thus does not apply to consensual same-sex relationships. Such relationships should not be punished by law as legal interpretations on what is considered unnatural must take into consideration advancements in science (Benoist, 2014; reviewed in Michli, 2016).

It is important to take into consideration that religion plays a very critical role in Lebanon, with 18 officially recognized religious groups according to the research firm Statistics Lebanon (International Religious Freedom Report, 2012). Approximately 27%

of the Lebanese population are Sunni Muslims, 27% Shia Muslim, 21% Maronite Christians, 8% Greek Orthodox, 5.6% Druze, 5% Greek Catholic, and the remaining are smaller Christian groups. There is also a small number of Jews, Baha'is, Buddhists, Hindus and Mormons in Lebanon (International Religious Freedom Report, 2012).

Additionally, the political system is sectarian, with the highest government positions reserved for the three most prevalent sects, namely Sunni, Shia, and Maronites. Harb (2010) found in a sample of 1,200 Lebanese youth that they identified themselves to be moderately religious; Muslim Sunni and Shia youth reported higher religiosity levels than all other sects. Lebanese youth identified mostly with their family, nation, and religion. For Muslims, Islamic identification was more important than Arab identification.

Considering that same-sex intercourse is regarded as a sin in conservative interpretations of both Islam and Christianity (Eidhamar, 2014; Lapinski & McKirnan, 2013; reviewed in Michli, 2016), it is not surprising that gay men in Lebanon often experience stigma and harassment by family members and their social circles; many men reported being denied employment because of their sexual orientation (Wagner et al., 2013; reviewed in Michli, 2016). Such discrimination can often lead to internalized self-hatred, which was tied to depression, anxiety, and overall decreased psychological wellbeing (Lebson, 2002).

Despite the prevailing religious prohibitions and anti-gay laws in Lebanon, lesbians and gay men tend to find their safe spaces in some areas in Beirut such as in pubs (Moussawi, 2015; reviewed in Michli, 2016) and in meeting points like the nongovernmental organization Helem, where LGBT individuals continue to be empowered (Saleh, 2015).



## CHAPTER IV

### AIMS AND HYPOTHESES

#### **A. Aims**

The aim of this study was to examine the predictors of homonegativity. There has been a focus on the predictors of homonegativity in the literature, particularly contact with lesbians and gay men, gender, gender role beliefs, private religiosity, public religiosity, religious experience, and, to some extent, openness. There were some limitations in the literature worth considering. For example, the contact variable has been typically defined as knowing a gay man or a lesbian woman, which offers very little – if any – information about the quality of that interaction (Smith et al., 2009), which this study aimed to assess for. Types of religiosity have been studied separately, without comprehensively including its various dimensions, which has led to mixed literature results (e.g. Blologowska et al., 2013; Veenvliet, 2008). The literature is scarce and inconclusive on openness to experience as a predictor of homonegativity. Few studies controlled for social desirability, which is an important social variable that could introduce bias into the results. It seems that no research has been conducted concerning the predictors of homonegativity in the context of Lebanon.

The present study aimed to address these gaps, and to examine social variables (contact with lesbians and gay men), gender variables (gender, gender role beliefs), faith variables (private religious practice, public religious practice, and religious/spiritual experiences), individual-difference variables (openness), and variables that might bias the model (social desirability, age, year at university, household income) under a holistic framework in a Lebanese sample. The outcome variable was homonegativity;

that is, attitudes towards gay men and lesbians. Investigating attitudes towards bisexual and transgender individuals did not fall within the scope of this study.

## **B. Hypotheses**

Contact with lesbians and gay men was associated with less homonegativity in most studies (Costa & Davies, 2012; King, Winter, & Webster, 2009; Rowniak, 2015; Smith et al., 2009; Woodford et al., 2012). Therefore, the following hypothesis was tested:

**Hypothesis 1.** Contact (quantity and quality) with lesbians and gay men will be a significant negative predictor of homonegativity.

Also, men were found to be more homonegative than women in most studies (Bowers et al., 2015; Costa & Davies, 2012; Cragun & Sumerau, 2014; Grigoropoulos & Kordoutis, 2015; Holland et al., 2013; Jenkins et al., 2009; Plugge-Foust & Strickland, 2000; Swank et al., 2013; Woodford et al., 2012). Therefore, the following hypothesis was tested:

**Hypothesis 2.** Gender will emerge as a significant predictor of homonegativity, where men will be more likely to be homonegative than women.

The majority of studies found traditional gender role beliefs, that is the beliefs that women and men are unequal, with men having the final authority and being providers, and women having the role to be a mother and housewife, to be related to more homonegativity (Costa & Davies, 2012; McDermott et al., 2014). The following hypothesis was tested:

**Hypothesis 3.** Traditional gender role beliefs will be a significant positive predictor of homonegativity.

Public religiosity has been found to be a positive predictor of homonegativity in several studies (Cragun and Sumerau, 2015; Jäckle & Wenzelburger, 2015). To test the extent to which public practice is related to homonegativity in Lebanon, the following hypothesis was tested:

**Hypothesis 4.** Public practice of religiosity will be a significant positive predictor of homonegativity.

Findings on private religiosity have been rather mixed, however the trend suggests that private religiosity is a negative predictor of homonegativity (Harbaugh & Lindsey, 2015; Veenvliet, 2008); thus, the following hypothesis was tested:

**Hypothesis 5.** Private practice of religiosity will emerge as a significant negative predictor of homonegativity.

Spirituality has been found to be a negative predictor of homonegativity in most studies (Cragun & Sumerau, 2015; Harbaugh & Lindsey, 2015). Thus, the following hypothesis was tested:

**Hypothesis 6.** Religious Experiences will be a significant negative predictor of homonegativity.

Because studies on openness and homonegativity have been rather few and inconclusive (Cramer et al., 2013; Miller et al., 2012), openness will be included as a predictor of homonegativity in this study. The following hypothesis was tested:

**Hypothesis 7.** Openness to experience will be a significant negative predictor of homonegativity.

In the west, individuals who score high on social desirability were found to portray themselves as less homonegative (Moskowitz et al., 2014). It is unclear how social desirability is linked to homonegativity in Lebanon. For this reason, we included

items in the questionnaire to measure perceived norms with regard to homosexuality among participants' peers at the university and in the community at large. This was meant to help determine the direction in which social desirability might influence scores on homonegativity. Because social desirability is associated with responses that would portray the participant in a positive light (Kazdin, 2014), the following hypothesis was explored:

**Hypothesis 8 (exploratory).** Social desirability will emerge as a significant predictor of homonegativity.

Age, level of education, and family income are well known variables that influence attitudes towards lesbian women and gay men (Jäckle & Wenzelburger, 2015). The following hypotheses were tested:

**Hypothesis 9.** Age will be a significant positive predictor of homonegativity.

**Hypothesis 10.** Level of education (year at university) will be a significant negative predictor of homonegativity.

**Hypothesis 11.** Family income will be a significant negative predictor of homonegativity.

# CHAPTER V

## METHODOLOGY

### **A. Format of the Survey**

The online questionnaire consisted of an informed consent form for the Psychology 101/201 sample (see Appendix A). The consent form informed the participants about the study, including its components, risks and benefits associated with it, and confidentiality of participant information, among other details that would help potential participants make an informed decision about whether or not to participate. It indicated to participants that the study was investigating attitudes of Lebanese students towards gender, sexuality, and their general experiences. The informed consent form also included the contact information of the principal investigator and the co-investigator, in case the participants had any questions about the study. The demographics form and the seven scales mentioned above are described in detail next. For an overview on the reliability values, see Table 1.

### **B. Measures**

**1. Demographics Questionnaire.** Ten items were used to measure the demographic variables gender, age, sexual orientation, major, year at university, family income; in addition, we included four items in an attempt to measure what students considered to be the perceived norm with regards to homosexuality at a university in Lebanon, and among their peers (see Appendix B). The perceived norms items were measured on a Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”).

**2. Contact with a Lesbian or Gay Person.** To our knowledge, there is no scale that measures contact with a lesbian or gay person. We created a 12-item scale that

measures quantity and quality of contact (see Appendix C). The contact measure included these dimensions with respect to lesbian and gay friends, family members, and acquaintances. A sample item was “Do you know of an acquaintance who is a lesbian woman?” and “If yes, indicate: The relationship I have with my lesbian acquaintance tends to be...”. Answer options included “Positive”, “Negative”, “Neutral”, and “I have more than one lesbian acquaintance, and the relationship to some is negative, while to others it is positive”. Scores for the amount of contact measure ranged from 0-6, and scores for the quality of contact measure ranged from 0-24. For the final analysis, we used the quality measure to determine both contact amount and quality; higher scores indicated more contact and positive quality of contact. The reliability of the quality of contact measure was .71. See the factor analysis of this measure below for more details.

### **3. Attitudes towards Lesbians and Gay Men, Revised Short Version**

**(ATLG-R; Herek, 1994).** The revised short version of the Attitudes towards Lesbians and Gay Men Scale by Herek (1994) was used to measure homonegativity (see Appendix D). The scale consists of two subscales; one subscale is the Attitudes towards Lesbians (ATL) subscale, with statements including “Lesbians just can’t fit into our society”, and the other is the Attitudes towards Gay Men (ATG) subscale, with statements including “Sex between two men is just plain wrong”. Each subscale consists of five items in a Likert format ranging from 1 (“strongly disagree”) to 9 (“strongly agree”). Scores on this measure have a range of 10 to 90, with higher scores indicating more negative attitudes towards lesbians and gay men. According to Herek (1994),  $r=.87$  for the ATG-S,  $r=.85$  for the ATL-S, and  $r=.92$  for the ATLG-S. Internal consistency was high for the subscales, with  $\alpha=.87$  for the ATL-S and  $\alpha=.91$  for the ATG-S. Herek (1994) recommended the use of the short version because its reliability is

comparable to the long version, and because of the decreased respondent burden.

Additionally, Phillips, Kivisalu, King, and O'Toole (2015) analyzed studies that used the ATLG scale and reported  $\alpha$ , and found that reliability in the majority of studies was in the excellent range, with  $\alpha$  for the total ATLG score ranging from .82 to .96. For this study the reliability was good, with  $\alpha=.79$ .

**4. Gender Role Beliefs Scale, Short Version (GRBS, Brown & Gladstone, 2012).** The short version Gender Role Beliefs Scale (Brown & Gladstone, 2012) was used to measure gender role beliefs in this study (see Appendix E). The scale consists of eleven items in a Likert format ranging from 1 (“strongly disagree”) to 7 (“strongly agree”)<sup>1</sup>, with statements including “Women with children should not work outside the home if they don’t have to financially” and “The initiative in courtship should usually come from the man”. The item “It is ridiculous for women to run a train and for men to sew clothes” was split into “It is ridiculous for women to run a train” and “It is ridiculous for men to sew clothes” to avoid double barreled items. Scores were added together, with higher scores indicating more traditional gender role beliefs, and lower scores indicate feminist gender role beliefs, with possible total scores ranging from 10 to 70. This scale is a shorter version of the Gender Role Beliefs Scale by Kerr and Holden (1996), and scores have a strong correlation with the original scale where  $r=.91$ . Additionally, the reliability of the short GRBS showed a strong internal consistency where  $\alpha = .83$ . Brown and Golden (2012) strongly encouraged the use of the 10-item

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<sup>1</sup> The rating of the Gender Role Beliefs scale, from 1 (strongly disagree) to 7 (strongly agree), was inconsistent with the rating of the original scale. The rating of the original scale was from 1 (strongly agree) to 7 (strongly disagree).

GRBS because of its strong psychometric properties and its decreased respondent burden on the participants. In this study, reliability was very good with  $\alpha=.82$ .

**5. Centrality of Religiosity Scale (Huber & Huber, 2012).** The Centrality of Religiosity Scale consists of 15 items with 5 subscales, each with 3 items (see Appendix F). The subscales are private religiosity, public religiosity, religious experiences, ideology, and intellect. For the purpose of this study, only the results of private religiosity, public religiosity, and spirituality were included in the final analysis. Sample items include “How important is personal prayer for you? (private religiosity), “How important is it for you to be connected to a religious community” (public religiosity), “How often do you experience situations in which you have the feeling that God or something divine intervenes in your life?” (religious experiences). Items were rated from 1 (“never”/not at all”) to 5 (“very often”/ “very much so”). Reliabilities of the subscales ranged from .80 to .93, and reliability of the whole scale ranged from .92 to .96 in previous studies (Huber & Huber, 2012). In this study, reliability of the private religiosity subscale was .90, for the public religiosity it was .88, and for religious experiences it was .90, which are all in the excellent range. The reliability for the three subscales combined was .94, which is also in the excellent range. See the factor analysis below for more information.

**6. Openness to Experience Subscale of the Big 5 Inventory (John & Srivastava, 1999).** The Openness to Experience Subscale (see Appendix G) was used to measure openness (John & Srivastava, 1999). The subscale consisted of 10 items, to which participants responded how strongly they perceived the items to describe them on a scale from 1 (“disagree strongly”) to 5 (“agree strongly”). Items included were “I see myself as someone who is curious about many different things” and “I see myself as



someone who is original, comes up with new ideas”. Possible scores had a range of 10 to 50, with higher score indicating more openness to experience. According to John and Srivastava (1999), the openness subscale of the Big Five Inventory has a strong internal consistency reliability of .83. In this study,  $\alpha = .61$ , which is in the acceptable range.

**7. Short Form of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982).** The short form of the Marlowe-Crowne Social Desirability Scale by Reynolds (1982) was used to assess for social desirability in this study (see Appendix H). The scale consists of 13 items where participants indicate whether they believe the statement is true or false. Possible scores range from 0 to 13, where 13 indicates higher social desirability. Items include “I am sometimes irritated by people who ask favors of me” and “I never deliberately said something that hurt someone’s feelings”. According to Reynolds (1982) the scale demonstrates acceptable reliability with  $r = .76$ . In this study, reliability was poor,  $\alpha = .54$ . Because reliability was so poor, and could not be improved by deleting items, further analyses of social desirability were dropped.

### **C. Pilot Study**

The survey was pilot tested with 11 participants. The average time needed to complete the survey was approximately 30 minutes. The method used was the think aloud method; participants voiced their concerns as they were filling out the survey. The participants had a few concerns, all of which were addressed in the final survey. For the religiosity form, participants voiced that an example should be given for what is meant by “religious services”. We clarified it in the final survey by adding examples of rituals in parenthesis “(e.g. Christian mass, Friday prayers...)”. Additionally, the word “lady” in the gender role beliefs scale was changed to “women”, as participants voiced that the question otherwise sounded like it was addressing men. In the gender role beliefs scale,

we also added “for men in particular” to the item, “It is disrespectful to swear in the presence of a woman,” because respondents noted that they agreed with the statement, but that they considered it disrespectful for all people to swear in general. They suggested adding that it would be disrespectful for men in particular to swear in the presence of a woman to make the question clearer. Finally, in the social desirability scale, we added the word “bothered” in parenthesis after the word “irked”, because some participants did not understand the meaning of the latter.

#### **D. Main Study**

**1. Procedure and Data Collection.** Data collection for the main study started after receiving the Institutional Review Board (IRB)’s approval on November 4, 2016 and ended on November 6, 2016. Participants were recruited from the AUB Psychology 101/201 pool using non-random convenience sampling. The students of the Psychology 101/201 research pool had a choice to earn 1 percentage point to their final course grade (research credit) by either participating in research studies or writing a brief report on an article from a psychological journal.

Students enrolled in Psychology 101/201 received an announcement of this research study on Moodle, which included some information about the purpose of the study and information on how to participate. Interested students were asked to click on the link at the end of the announcement, which directed them to Lime Survey. Participants were presented with an informed consent form (described above). Upon consent, participants were asked to complete the questionnaire. Upon completion, each participant received a code. Participants emailed the generated codes to their Psyc 101/201 professor and received an extra credit point added to their final course grade.

**2. Order effects and counterbalancing.** Two online counterbalanced versions of the questionnaire were generated online to control for order and sequence effects. Version 1 of the survey had the following order: Demographics, Contact with Lesbians and Gay Men Scale, Attitudes towards Lesbians and Gay Men, Gender Role Beliefs Scale, Centrality of Religiosity Scale, Openness Scale, and Social Desirability Scale. Version 2 of the survey was in reverse order, with Demographics appearing first.

**3. Sample Characteristics and Demographics.** To participate in this study, participants had to be enrolled at the American University of Beirut and had to be between 18 and 22 years old. A total of 319 participants took part in this study. Thirty submissions were excluded from the data analysis because those participants did not identify as heterosexual, however they received credit for participation. Four participants did not indicate their sexual orientation, and had to be excluded as well, on the grounds that we could not know if they met the sexual orientation criterion. Two participants had to be excluded because they did not meet the age criterion. One participant did not consent and submitted the survey, and another submitted an empty survey; both were excluded.

The frequencies for gender, year at university, and household income are provided in Table 2. The final sample size was  $N=281$ , with 36% males and 64% females. 49.1% of the sample filled Version 1 of the survey, and 50.9% filled version 2. The age of participants had a range of 18 to 22 ( $M=18.63$ ,  $SD=0.89$ ); 59.3% of participants were 18 years old, 24.3% were 19 years old, 11.4% were 20 years old, 4.6% were 21 years old, and 0.4% were 22 years old (Table 2). More than half the participants were sophomores (58.6%), followed by juniors (20.7%), freshman (15.3%), and finally seniors (5.4%). 2.2% of the sample reported that their household income was

less than \$1,000 per month, 18% reported that it was between \$1,000-\$2,999, 13.7% reported that it was between \$3,000-\$4,999, 7.6% reported that it was between \$5,000-\$6,999, 18% reported that it was more than \$7,000, 10.4% preferred not to say, and 30.2% reported that they did not know what the monthly household income was (Table 2).

The descriptive statistics are provided in Table 3 below. Participants, on average, had little contact with lesbians and gay men ( $M = 1.64$ ,  $SD = 1.49$ ). Participants had slightly positive attitudes towards lesbians and gay men ( $M = 47.07$ ,  $SD = 17.79$ ). On average, participants rather slightly disagreed with the statements that university students and society at large considered homosexuality to be wrong, with scores for university students ( $M = 2.88$ ,  $SD = 0.89$ ) and society at large ( $M = 2.93$ ,  $SD = 1.30$ ) slightly below the midpoint. On average, participants rather slightly disagreed with Article 534, which forbids “intercourse contradicting to nature” ( $M = 2.84$ ,  $SD = 1.39$ ). Additionally, participants on average had rather low rigid gender role beliefs ( $M = 32.25$ ,  $SD = 11.25$ ), which means that they rather believed women and men to be equal. On average, participants had rather high private religiosity ( $M = 3.29$ ,  $SD = 1.30$ ), rather low public religiosity ( $M = 2.91$ ,  $SD = 1.17$ ), and rather high religious or spiritual experience ( $M = 3.29$ ,  $SD = 1.24$ ). The sample reported high openness levels ( $M = 36.91$ ,  $SD = 4.43$ ).

## CHAPTER VI

### RESULTS

#### A. Preliminary Analysis

Preliminary analyses were conducted before conducting the main analyses. The preliminary analyses included missing values analysis, analysis of univariate and multivariate outliers, and normality analysis.

**1. Missing Value Analysis.** The Missing Value Analysis function of SPSS was used to perform a missing value analysis. According to Tabachnick and Fidell (2011), it is acceptable for variables to have 5% or less missing values. Results revealed that all variables had less than 5% missing values. Additionally, Little's MCAR was also not significant,  $\chi^2(22, N = 281) = 30.71, p = .10$ , which indicates that missing values were randomly distributed.

**2. Univariate Outliers, Multivariate Outliers, and Influential Cases.** Results of different scales were combined to create one score for each variable. The final scores were converted to Z-scores to check for univariate outliers, with a Z-score of 3.29 specified as a cutoff. No univariate outliers were detected. Multivariate outliers were inspected using the Mahalanobis distance function in SPSS. The cutoff specified was  $\chi^2(8) = 26.13, p < .001$ . There were no cases above this value, indicating that there were no multivariate outliers. Cook's distance indicated that there were no influential cases as there were no values above 1.

#### Assumptions of Parametric Testing

#### B. Assumptions of ANOVA Analyses

**1. Level of measurement of the dependent variable.** The dependent variable examined was homonegativity, and it was measured using a continuous scale ranging from 1 to 9. The requirement for a continuous dependent variable was met in this study.

**2. Normality of homonegativity (outcome variable).** The Shapiro-Wilk test and the Kolmogorov-Smirnov test are not recommended for large sample sizes, as slight deviations from normality can indicate significance (Field, 2013). Thus, the z-scores of skewness and kurtosis were used to test for normality. Z-skewness was obtained by calculating skewness by its standard of error, and z-kurtosis by dividing it by its standard of error. Values within the  $\pm 3.29$  significance level would indicate that the assumption of normality was met. The z-skewness of homonegativity was 0.86 and z-kurtosis of homonegativity was 2.38. Both z-skewness and z-kurtosis were within the  $\pm 3.29$  significance level, indicating that the assumption of normality for homonegativity was met.

### **C. Assumptions for ANOVA and Regression Analyses**

**1. Ratio of cases to independent variables.** Tabachnick and Fidell (2011) propose that the sample size must be greater than  $50+8m$  for analyses of regression and correlation, where  $m$  is equal to the number of predictors, and it must be larger than  $104+m$  for analyses of individual predictors. This study had 8 predictors, giving a required sample size of  $N=114$  for the first recommendation, and  $N= 112$  for the second recommendation. By convention it is also recommended to include 15-20 participants per predictor; this study would require  $N= 160$  according to this convention. This study met all requirements with a final sample size  $N=281$ .

**2. Normality of the predictor variables and homonegativity (the outcome variable).** Values within the  $\pm 3.29$  significance level would indicate that the assumption

of normality was met. The variables homonegativity, gender role beliefs, overall religiosity, and openness to experience had z-skewness and z-kurtosis within the acceptable level of  $\pm 3.29$ . Contact with lesbians and gay men had a z-skewness beyond this cutoff, so here, the normality assumption was violated. To stay true to the data, however, no changes will be done. Spearman's rho will be used in the correlation analyses of the contact measure, since it is recommended to do so by Field (2013).

**3. Multicollinearity.** The Variance Inflation Factor (VIF) indicated that values were all below 10, which means that there was no multicollinearity. Inspection of the correlation matrix between all predictors revealed no correlations greater than .8. It is worth noting that the correlations between private religiosity, public religiosity, and religious experience were rather high; however they did not meet the .8 cutoff level. See below the factor analysis regarding this scale.

**4. Independence of errors.** The Durbin-Watson value was found to be 1.88, which is close to 2, indicating that the assumption of independence of errors was met.

**5. Normality of residuals.** To test the assumption of normality of residuals, the P-P plot and histogram were examined. The P-P plot shows that most data points fall close to the diagonal line, and the histogram indicates a bell shaped curve of the homonegativity variable (see Figure 1 and Figure 2). This indicates that the assumption of normality of residuals was met.

**6. Homoscedasticity of regression slope.** The assumption of homoscedasticity was tested using the residuals scatter plot (ZRESID vs ZPRED). The scatterplot indicates that most data points are randomly scattered around zero without evidence of funneling (see Figure 3). The assumption of homoscedasticity of regression slope was met.

## **D. Order Effects**

Independent samples t-tests were run to examine the effect of counterbalancing on the different groups. Results indicated that there were no differences in any of the groups among the two versions, except for gender role beliefs, with  $t(271)=-2.33$ ,  $p < .05$ . The group that received version 2 of the study had significantly more rigid gender role beliefs ( $M=33.77$ ,  $SE=0.98$ ) than the group which received version 1 of the survey ( $M=30.62$ ,  $SE=0.93$ ). We can say with certainty, however, that the order effect did not occur due to fatigue, since the effect happened halfway through the study. While it is possible that participants were affected by preceding questions, it is unlikely since the previous scales in both versions would have affected more relevant items. For example, since gender role beliefs and homonegativity are closely linked together, we would have observed a significant difference between homonegativity in the two groups as well, had there been a serious order effect. It is unlikely that the difference in responding between the two versions was because of a meaningful difference.

## **E. Exploratory Factor Analysis for Contact with Lesbians and Gay Men**

**1. Statistical assumptions.** The sample size of 281 is below the recommended sample size recommended by Tabachnick and Fidell (2011). Nevertheless, considering that this is a new scale we developed, we found value in conducting a factor analysis. The cutoff for factor loading was .4 as recommended by Field (2013).

The determinant obtained (.34) was greater than .00001, and none of the correlations were above .8, therefore there was no multicollinearity or singularity among the variables. The Kaiser-Meyer-Olkin value was .71, which is the recommended value; this indicates that factor analysis should yield distinct and reliable factors. Bartlett's Test for Sphericity was statistically significant,  $\chi^2(280) = 290.71$ ,



$p < .05$ , indicating that the correlations within the R-matrix were sufficiently different from zero to warrant factor analysis. This means that the correlation matrix was factorable, even though the sample size was below the recommended 300. The measure of sampling adequacy for all items were well above .5, indicating that no items warranted removal from the analysis

**2. Factor Structure.** An exploratory factor analysis using Alpha factoring and varimax rotation was conducted for the Contact Scale. The analysis revealed one factor only. The two questions regarding contact with family members did not have sufficient loading, and had to be removed from further analysis. The reliability of the Contact measure was acceptable, with  $r = .74$ . We will continue to refer to this scale as the Contact Scale.

## **F. Exploratory Factor Analysis for Centrality of Religiosity Scale**

**1. Statistical assumptions.** As mentioned above, the sample size of 281 is below the recommended sample size of 300 by Tabachnick and Fidell (2011). Nevertheless, considering that the Centrality of Religiosity Scale was being examined for the first time in Lebanon, we conducted an exploratory factor analysis. The cutoff for factor loading was .4, as recommended by Field (2013).

The determinant obtained (.002) was greater than .00001, and none of the correlations were above .8, therefore there was no multicollinearity or singularity among the variables. The Kaiser-Meyer-Olkin values for the Centrality of Religiosity Scale was .92, which is above the recommended .7, indicating that factor analysis should yield distinct and reliable factors. Bartlett's Test for Sphericity was statistically significant,  $\chi^2(280) = 1661.68$ ,  $p < .05$ , indicating that the correlations within the R-matrix were sufficiently different from zero to warrant factor analysis. This means that

the correlation matrix was factorable, even though the sample size was below the recommended 300. Additionally, the measure of sampling adequacy was well above .5, indicating that no items required exclusion from the analysis.

**2. Factor Structure.** An exploratory factor analysis using Alpha factoring and direct oblimin rotation was conducted for the Centrality of Religiosity Scale. The analysis revealed one factor only, which we named “overall religiosity”. The reliability of overall religiosity was excellent, with  $r = .94$ . Considering that there was only one factor within this scale, we will no longer distinguish between private religiosity, public religiosity, and spirituality, but will refer to the religiosity construct as “overall religiosity”.

## Hypothesis Testing

### G. Correlation between Predictor Variables and Homonegativity

The Pearson’s correlations between the predictor variables (gender, gender role beliefs, overall religiosity, openness, age, household income, and year at university) and the outcome variable (homonegativity) were conducted using a one-tailed test (see Table 4). Correlations for contact with lesbians and gay men with homonegativity were conducted using Spearman’s rho and a one-tailed test.

Results revealed that being female was negatively correlated with homonegativity and being male was positively correlated with homonegativity,  $r = -.21$ ,  $p = .001$ . This constituted a small-to-medium effect size. There was a negative, significant and large correlation between amount of contact and homonegativity,  $r_s = -.52$ ,  $p < .001$ , which means that more and better quality of contact was correlated with less homonegativity, supporting our hypothesis. There was also a significant, large, positive correlation between traditional gender role beliefs and homonegativity,  $r = .59$ ,

$p < .001$ ; this means that women and men who believe in traditional roles for both genders, like women's roles to be completing household chores and raising children, and men to be providers and protectors, were more likely to have negative attitudes towards lesbians and gay men. Overall religiosity had a significant, positive, and large correlation with homonegativity,  $r = .54, p < .001$ . Openness had a significant negative correlation to homonegativity with a small-to-medium effect size,  $r = -.13, p < .05$ . There was a significant negative small-to-medium relation between household income and homonegativity,  $r = -.14, p < .05$ . These findings were all in line with our hypotheses.

There was no significant relation between age and homonegativity,  $r = -.01, p = .84$ . There was also no significant relation between year at university and homonegativity,  $r = -.03, p = .63$ . These findings were contrary to our hypotheses.

#### **H. Regression Analysis: Predictors of Homonegativity**

To test for hypotheses 1 through 11, a forced entry multiple regression was conducted. The outcome variable was homonegativity and the predictor variables were contact quantity and quality with lesbians and gay men, gender, gender role beliefs, overall religiosity, openness, age, year at university, and household income status. The F-test revealed that the regression model with the predictors (contact with lesbians and gay men, gender, gender role beliefs, overall religiosity, openness, age, year at university, and household income status) was significantly better than the mean in explaining the variance in the outcome variable (homonegativity),  $F(8, 235) = 32.31, p < .001$  (see Table 5).

The regression model explained 52% ( $R^2 = .524$ ) of the variance of the outcome variable (homonegativity). The adjusted R square for the second model was  $R^2 = .51$ ,

indicating that the final regression model explained 51% of the variance of the outcome variable (homonegativity) at the level of the population. In addition, when moving from the sample to the population, the shrinkage  $\Delta R^2 = 1\%$ ; indicating that the regression model would generalize well to the population.

Inspecting the t-tests in the table of coefficients (see Table 6) revealed that among the eight predictors, only the predictors contact quantity and quality with lesbians and gay men, overall religiosity, and traditional/rigid gender role beliefs were significant predictors of the outcome variable homonegativity. Among these predictors, overall religiosity had the strongest relation to homonegativity, followed by traditional gender role beliefs, and finally contact quantity and quality with lesbians and gay men.

The results of the multiple regression showed that contact quantity and quality with lesbians and gay men was a significant negative predictor of homonegativity,  $b = -.23$ ,  $t(235) = -4.38$ ,  $p < .001$ . This means that individuals who had a higher/more positive quality contact with lesbians and gay men also had less homonegativity, that is, they had more positive attitudes towards lesbians and gay men. Hypothesis 1 was confirmed.

Additionally, the variable traditional gender role beliefs was a significant predictor of homonegativity,  $b = .33$ ,  $t(235) = 5.92$ ,  $p < .001$ . This means that individuals who had more traditional or rigid gender role beliefs had more homonegativity than those with modern gender role beliefs. Hypothesis 3 was confirmed.

We combined the religiosity subscales to form an overall religiosity score, considering that the results of the factor analysis indicated that religiosity was one

coherent factor (see factor analysis above). Overall religiosity was a significant positive predictor of homonegativity,  $b = .35$ ,  $t(235) = 6.80$ ,  $p < .001$ .

The variables gender, openness, age, household income, and year at university were not significant predictors of homonegativity in the final model, with  $b = -.07$ ,  $B = -2.66$ ,  $t(235) = -1.41$ ,  $p = .16$ , *ns*;  $b = .05$ ,  $B = 0.18$ ,  $t(235) = 0.98$ ,  $p = .33$ , *ns*;  $b = .01$ ,  $B = -0.19$ ,  $t(235) = -0.15$ ,  $p = .88$ , *ns*;  $b = -.07$ ,  $B = -0.61$ ,  $t(235) = -1.47$ ,  $p = .14$ , *ns* and  $b = -.03$ ,  $B = 0.77$ ,  $t(235) = 0.52$ ,  $p = .61$ , respectively. Thus, hypotheses 2, 7, 9, 10, and 11 were not supported.

## CHAPTER VII

### DISCUSSION

The aim of this research study was to investigate the predictors of homonegativity, that is the negative attitudes towards lesbians and gay men, in a sample of Lebanese students. We chose these variables under a holistic framework including social variables (contact with lesbians and gay men), gender variables (gender, gender role beliefs), faith variables (private religious practice, public religious practice, and religious/spiritual experiences), individual differences variables (openness), and variables that might bias the model (age, year at university, household income). The holistic framework was important given the potential to control for the effect of different, potentially important variables in the final model. We found value in investigating this question given that we found no published literature concerned with this research area in Lebanon. The research conducted in the west investigated some predictors separately (e.g., Harbaugh & Lindsey, 2015; Hirai et al., 2014), but some of the procedures used were weak as they did not define their contact measures thoroughly (e.g., Costa & Davies, 2012; King et al., 2009; Woodford et al., 2012). Additionally, studies on some variables found mixed results in different studies (e.g., Barron et al., 2008; Hirai et al., 2014). It seems that these predictors have not been investigated holistically under one framework. We investigated these variables as predictors of homonegativity, which constitutes the negative attitudes towards lesbians and gay men.

#### **A. Interpretation of the Findings**

This section presents the main findings of the current study. It includes an analysis of the significant predictors, which were contact with lesbians and gay men,

traditional gender role beliefs and overall religiosity. Additionally, this section covers gender, private religiosity, public religiosity, religious experience, openness, and household as significant correlates of homonegativity. Finally, it offers possible explanations as to why age and year at university were not predictive of or correlated with homonegativity.

An exploratory factor analysis of the Centrality of Religiosity subscales (private religiosity, public religiosity, and religious experience) indicated that the three subscales loaded on one factor, with the underlying theme being overall religiosity. Overall religiosity was the strongest predictor of homonegativity. To our knowledge, no study investigated religiosity as an overall construct consisting of various dimensions of religiosity. This study suggests that when the various dimensions of religiosity are taken together (private religiosity, public religiosity, and spirituality), religiosity emerges as a positive predictor of homonegativity. It comes to no surprise that overall religiosity was significant in predicting homonegativity, because religion is fundamental in forming Lebanese identity (Harb, 2010), and because it plays important roles on a societal and political level. Same-sex relationships are considered a sin in most conservative interpretations of Islam and Christianity, which could explain the directionality of our findings (Eidhamar, 2014; Lapinski & McKirnan, 2013); specific research studies investigating interpretations of holy books are needed to test if this is true for the case of Lebanon.

Contrary to our expectations, the separate dimensions of private religiosity, public religiosity, and religious experience were not distinct from each other. They were significant correlates of homonegativity, however. Opposing our expectations, which were driven by the literature published in the west, this study suggests that private

religiosity and religious experience were significantly positively, rather than negatively correlated with homonegativity. Public religiosity was a significant positive correlate to homonegativity, which is consistent with the literature (e.g. Morrison & Morrison, 2011; Roeder & Lubbers, 2015). To our knowledge, no study so far investigated the different dimensions of religiosity separately from each other in one study; findings on the various religiosity variables are mixed. Some studies found private religiosity to be a positive correlate of homonegativity (e.g. Harbaugh & Lindsey, 2015), whereas others found it to be a negative correlate (e.g. Jäckle & Wenzelburger, 2015). The examination of religious experience or spirituality in the literature mainly showed that it was a negative predictor of homonegativity (e.g. Doeblner, 2015). According to Cragun and Sumerau (2015), it might be that individuals in the west are letting go of religions because religions can be interpreted to advocate for negative attitudes towards lesbians and gay men. Such individuals would, however, keep holding on to the connection to a higher being (Cragun & Sumerau, 2015). Most studies found public religiosity to be a positive correlate of homonegativity (e.g., Rainey & Trusty, 2007; Roeder & Lubbers, 2015), which is consistent with our findings. Our data suggest that in the context of Lebanese students the various dimensions of religiosity come together to form one coherent religiosity construct, which is not necessarily the same in the west. It could be that individuals could be letting go of religion in the west while holding on to spirituality and to a connection with a higher power. This does not appear to be the case in our sample, where the different religiosity levels appeared to be correlated to each other, as well as to homonegativity (Cragun & Sumerau, 2015; Wilcox, 2009).

The next important predictor was traditional gender role beliefs. Rigid traditional gender role beliefs were both a significant positive correlate and predictor of



homonegativity, where more rigid gender role beliefs meant participants were more likely to have negative attitudes towards lesbians and gay men. While being male was significantly correlated with being more homonegative, this effect was eliminated in the regression. This suggests that there is no direct relation between gender and homonegativity. This is in line with Costa and Davie's (2015) findings that individuals with rigid gender role beliefs consider lesbians and gay men to be straying from their prescribed gender roles, which then leads to homonegativity. This is consistent with the literature and our hypotheses.

Contact with lesbians and gay men in this study was measured in a novel way; previous studies tended to measure contact by including one question asking participants whether they know a lesbian or a gay man (Smith et al., 2009). Our method in measuring contact was more holistic and included items that measured not only whether there was contact between the participant and lesbian or gay people, but also differentiated between family, friends, and acquaintances, and investigated the quality of contact. We were obliged to remove the questions regarding family in this analysis, because the items did not load sufficiently on the contact measure in the factor analysis. Nevertheless, distinguishing between contact quantity and quality, and between friends and acquaintances filled an important gap in the literature. The results of this study revealed contact with lesbians and gay men to be a significant negative correlate and predictor of homonegativity, indicating that participants who had high quantity and quality of contact had positive attitudes towards lesbians and gay men. This predictor was the third strongest, indicating that contact with lesbians and gay men plays a key role in determining homonegativity. This finding is consistent with the literature, which has found contact with lesbians and gay men to be predictive of less homonegativity

(e.g. Smith et al., 2009). It also lends support to Intergroup Contact Theory (Allport, 1954), which suggests that contact among different groups, in this case among people with different sexual orientations, is likely to be associated with less negative attitudes (Pettigrew, 2008).

Findings in the literature regarding openness had been mixed (Cramer et al, 2013; Hirai et al., 2014); our findings suggest that while openness is a significant negative correlate of homonegativity, its predictive power is lost in the regression, suggesting that there is no direct relation between openness and homonegativity. It could also be that openness was merely a mediator of homonegativity, and that those other variables played more direct and significant roles in predicting negative attitudes. Additionally, household income was a significant positive correlate of homonegativity, which is in accordance with the literature (e.g. Jäckle & Wenzelburger, 2015), however its predictive power was also lost in the regression model, which suggests that there is no direct relation between income and homonegativity.

Social desirability was scarcely investigated or controlled for in the literature on homonegativity. Unfortunately, in this study, the reliability of social desirability was poor and was thus dropped from further analysis. It is our hope, however, that the anonymous nature of the surveys allowed participants to feel safe in answering the items honestly. Alternative ways that might be better to measure and reduce bias are mentioned in the limitations section.

Finally, age and year at university were not found to be related to or predictive of homonegativity, which can be explained by the very small range of ages (18-22) in our sample; there was a lack of variability in range, with more than half the participants being 18 years old (59.3%) and in their sophomore year (58.6%).

## **B. Limitations and Future Directions**

It is important to read the interpretations of this study while keeping in mind its limitations. First, this study is nonexperimental, so causation cannot be implied. It is recommended for future studies to consider conducting experiments to delineate the effects of contact with lesbians and gay men to homonegativity, while controlling for the variables religiosity, gender role beliefs, openness, and the possible covariates. This would provide better information on how contact can be used to change attitudes towards lesbians and gay men.

Additionally, the sample used was limited to students of an introductory psychology course at the American University of Beirut; this sample might have different characteristics from students of other universities and citizens across Lebanon. These results can be generalized to university students with similar characteristics to this sample. It is recommended to include convenience samples from the community in future studies.

It would be recommended to use an Implicit Associations Test for homonegativity to control for possible socially desirable responding. This method has been used by Marsh and Brown (2011), however we were not able to incorporate it in our study, since we would need funding to obtain the tool. Future studies with the necessary funding are strongly recommended to use this method, which would be a better way to control for social desirability.

Moreover, we only investigated three dimensions of religiosity, without regarding intellectual religiosity and ideology; this might have decreased the power of the religiosity construct as a whole. In light of this study's findings, future studies conducted in Lebanon on this topic are recommended to use the entire Centrality of

Religiosity Scale by Huber and Huber (2012), because it views religiosity in a holistic manner, combining private and public religiosity, religious experience/spirituality, intellect and ideology.

Moreover, there is no existing validated measure of contact with lesbians and gay men in the literature. Past studies tended to investigate contact by including a question in the survey about whether the participant knows a gay or lesbian friend (e.g. Smith et al., 2009). We accounted for this limitation by including a more exhaustive scale that also assesses amount and quality of contact; and we distinguished between friends and acquaintances. While our scale was reliable, we cannot be sure it is valid. This is a limitation to previous studies, as well as ours. Future studies might find it useful to assess the validity of the scale constructed in the present study or to create a valid and reliable tool that measures various dimensions of contact with lesbians and gay men. Future studies might also use such an elaborate scale to compare how contact with friends vs. family vs. acquaintances influences attitudes towards lesbians and gay men, and to compare amount and quality of contact among these groups in relation to homonegativity. We could not accomplish this in this study given our sample size. Future studies with larger samples might be able to take this step.

The present study was concerned only with attitudes towards lesbians and gay men, and did not investigate attitudes towards bisexual and transgender individuals, and other sexual minorities. This was a productive first step in investigating homonegativity in the context of Lebanon; future studies are encouraged to build on this by investigating attitudes towards other sexual minority groups.

Finally, our model explained 51% of the variance in predicting homonegativity. This means that there remains 49% of the variance to be explained. Other predictors that

are encouraged to be investigated, in addition to contact with lesbians and gay men, gender role beliefs, and religiosity, are knowledge about sexual minorities, empathy, and other personality constructs such as agreeableness. A study by Obeid et al. (2015) showed that knowledge about autism was associated with less stigma towards autism; it could be argued that, since lesbians and gay men experience stigma from society, more knowledge on the topic of sexual orientation would yield less stigma and homonegativity. A recent study in a participant pool with different attachment styles found that empathy played a key role in predicting prejudice against Muslims (Boag & Carnelly, 2016). A study by Ekehammar and Akrami (2007) found that agreeableness in addition to openness was an important predictor of racial prejudice against immigrants. It is thus advisable to investigate these variables in relation to homonegativity.

### **C. Implications**

Causality cannot be deduced from the results of the present study. Nonetheless, some meaningful implications can still be drawn. The present study was mainly concerned with discerning the predictors of homonegativity and with determining how those predictors should be addressed to decrease homonegativity. Negative attitudes towards homonegativity can lead to internalized homonegativity, which means that lesbian and gay people would internalize the negative attitudes towards themselves, which can cause psychological distress (Williamson, 2000). Our study shed light on what factors might most lead to homonegativity, namely less contact with lesbians and gay men, traditional gender role beliefs, and higher levels of religiosity.

Creating contact would be the most feasible way in reducing negative attitudes, as it is easier to manipulate than other variables like gender role beliefs. It might be fruitful to consider creating awareness workshops to clear out possible

misunderstandings that could exist about lesbians and gay men. Inviting gay and lesbian speakers to share aspects of their lives and to discuss how possible discrimination affects them might break barriers between heterosexual people with negative attitudes and gay people. Offering workshops related to sexuality might also be fruitful in achieving this goal.

In light of our findings regarding gender role beliefs, advocating for feminist principles such as equality between men and women, as well as racial minority groups and sexual minorities is a slow process that might prove effective in abolishing negative attitudes towards lesbians and gay men. NGOs like Helem and activists should be supported in their mission to abolish Article 534 to create social equality. The NGO Abaad recently succeeded in encouraging a discussion in the parliament to abolish Article 522, which allows Lebanese men to marry their rape victims (Obeid & Khaled, 2016). Perhaps similar efforts would lead to a reconsideration of Article 534, which would be a productive step towards equality.

Michli (2016) found that being gay and being religious were not mutually exclusive, and suggested that lesbian, gay, and bisexual individuals could be encouraged to familiarize themselves with religious leaders and movements that are trying to show that one could be both gay and religious. Breaking barriers between sexual minorities and religious faith leaders, and creating contact and awareness in this field, might encourage progressive interpretations of religious texts that would not put sexual minorities at a disadvantage.

#### **D. Conclusion**

This study was concerned with the predictors of homonegativity in the context of Lebanon, and investigated predictors under a holistic framework. Results indicated

that contact with lesbians and gay men, traditional gender role beliefs, and overall religiosity were significant in predicting homonegativity. Recommendations for future directions were given, in addition to clinical and societal recommendations to help fight discrimination and empower vulnerable clients struggling with internalized homonegativity as a result of societal homonegativity.

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## APPENDIX A

Informed Consent – Psychology 101/201 Recruitment  
American University of Beirut  
P.O. Box 11-0236, Riad El Solh, 1107 2020, Beirut, Lebanon  
**CONSENT TO SERVE AS A PARTICIPANT IN A RESEARCH PROJECT**

Principal Investigator: Nidal Daou, Ph.D., Assistant Professor of Psychology  
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**Nature and Purpose of the Project:** This study involves research that aims to examine the attitudes of University students in Lebanon towards gender, sexuality, and their general experiences. Approximately 220 participants who are at least 18 years old will be recruited for this study. Please consider that some questions address sensitive topics such as sexuality, your sexual orientation, and your attitude towards other people's sexual identities.

**Methodology of Recruitment:** The psychology department encourages students to make use of the extra credits that are given in exchange of their participation in research. Participating in research is one way for students to make extra credit. Students enrolled in Psyc101/201 who are interested in making extra credit and are at least 18 years old could serve as research participants in research studies or can choose to write a brief report on articles in psychological journals.

**Explanation of Procedures:** As a research participant, you will be asked to read this informed consent form and consider carefully your participation. If you decided to participate (by clicking the yes button), the link will take you to the survey. The questions asked will help in the field of research investigating attitudes towards gender, sexuality, and general experiences of Lebanese students. You are only urged to answer in a truthful and honest manner.

Your name and contact information will **not be asked** and **it can be assured that there are no identifiers. Anonymity is secured and hence no one could link a certain response to a particular participant.**

Only the project director and the co-investigator will have access to the data. **Data sets (i.e. soft copies) that are present on the computer will be protected via a secure password** for a period of three years after which the data will be **permanently deleted**. It is expected that your participation in this survey will last about 30 minutes. Participants can skip some questions if they do not want to answer them.

**Potential Discomfort and Risks:** There are no more than minimal risks (similar to those encountered in routine physical and psychological exams) associated with participation in this survey.

**Benefits:** The potential benefit is that your participation will contribute to the research concerned with understanding attitudes of young Lebanese people to gender, sexuality, and general experiences. By your participation you will earn one extra percentage point on your final grade on the Introductory Psychology Course.

**To earn your extra credit:** You will receive a **completion code at the end of the survey.** Please give this completion code to your Psychology instructor who will then provide you with the extra credit.

**Costs/Reimbursements:** Your participation in this survey incurs no costs.

**Alternatives to Participation:** If students enrolled in Psychology 101/201 decide not to participate in this or other research studies, they can choose to write a brief report on articles published in psychological journals in exchange for credit (one extra point added to the course average for each brief report – please ask your Psyc 101/201 instructor for further details).

**Termination of Participation:** Should you decide to give consent to participate in this survey, the project director might disregard your answers if the results show that you have not abided by the instructions given at the top of each set of questions. You may also choose to terminate your participation at any point by exiting the survey.

**Confidentiality:** The results of your participation will be kept fully confidential. This means that only the project director and co-investigator will have access to the data, which will be anonymous, as no identifying information would be linked to the data you provided. Only information that cannot be traced to you will be used in reports published or presented by the director or investigator. Raw data on the computer **will be protected via a secure password** for a period of 3 years following the termination of the study. After the 3 years have elapsed, the raw data will be **permanently** deleted. Records may be audited by IRB while assuring confidentiality.

**Withdrawal from the Project:** Your participation in this survey is completely voluntary. You may withdraw your consent to participate in this research at any point without any explanation and without any penalty. You're free to stop answering this survey at any point in time without any explanation.

**Who to Call if You Have Any Questions:** This project has been reviewed and approved for the period indicated by the American University of Beirut (AUB) Institutional Review Board for the Protection of Human Participants in Research and Research Related Activities. If you have any questions about your rights as a research participant, or to report a research related injury, you may call: IRB, AUB: 01-350000 Ext. 5445 or 5455

If you have any concerns or questions about the conduct of this research project, you may contact:

Nidal Daou: [nn07@aub.edu.lb](mailto:nn07@aub.edu.lb), 01-350000 Ext. 4376/4360

Mona Akra: [mma157@mail.aub.edu](mailto:mmal57@mail.aub.edu)

**Participant's Consent:** By clicking the yes button, you agree that you have had the time to read and understand the information contained in this document, and to consider your participation in this research study. You also provide consent to participate in this research study. The purpose, procedures to be used, as well as, the potential risks and benefits of your participation have been explained to you in detail. You can refuse to participate or withdraw your participation in this study at any time without penalty.

I agree to participate in this research and I am at least 18 years old.

YES    NO

## APPENDIX B

### Demographics Questionnaire

1. **Gender:**  Male  Female

2. **Age in years:** \_\_\_\_\_

3. **Nationality:** \_\_\_\_\_

4. **Major:** \_\_\_\_\_

5. **Year at University**

Freshman  Sophomore  Junior  Senior  Graduate

6. **Household (Family) Monthly Income. Please use the scale provided:**

\_\_\_ Less than \$1,000

\_\_\_ \$1,000-2,999

\_\_\_ \$3,000-4,999

\_\_\_ \$5,000-\$6,999

\_\_\_ \$7,000 or more

\_\_\_ Prefer not to say

\_\_\_ Don't know

7. **Please select the item that best describes you:**

- I am heterosexual (straight)
- I am Lesbian/Gay/Bisexual/transsexual/questioning (unsure)/none/other

### Perceived Norms Questions

1. **In my opinion, sex between two people of the same gender is contradicting to nature.**

1 (Strongly Disagree)                      2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly Agree)

2. **Most university students consider homosexuality to be normal.**

1 (Strongly Disagree)                      2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly Agree)

3. **Homosexuality is considered wrong in society at large.**

1 (Strongly Disagree)                      2 (Disagree) 3 (Neutral) 4 (Agree) 5 (Strongly Agree)

4. **Most of my friends consider homosexuality to be wrong.**

1 (Strongly Disagree)  
Agree)

2 (Disagree)3 (Neutral)4 (Agree)5 (Strongly

**5. I agree with Article 534 in the Lebanese penal code, which forbids “intercourse contradicting to nature”.**

1 (Strongly Disagree) 2 (Disagree) 3 (Neutral)4 (Agree)5 (Strongly Agree)

## APPENDIX C

### **Contact with Lesbian and Gay Persons Scale<sup>2</sup>**

**1. Do you know of a family member (e.g. sister, aunt, cousin) who is a lesbian woman?**

- Yes
- No

**2. If yes, indicate:**

The relationship I have with my lesbian family member(s) tends to be:

- Positive
- Negative
- Neutral
- I have more than one lesbian family member, and the relationship to some is negative, while to others it is positive

**3. Do you know of a family member (e.g. sibling, uncle, cousin) who is a gay man?**

- Yes
- No

**4. If yes, indicate:**

The relationship I have with my gay family member(s) tends to be:

- Positive
- Negative
- Neutral
- I have more than one gay family member, and the relationship to some is negative, while to others it is positive

**5. Do you know of a friend who is a lesbian woman?**

- Yes
- No

**6. If yes, indicate:**

The relationship I have with my lesbian friend tends to be:

- Positive
- Negative
- Neutral
- I have more than one lesbian friend, and the relationship to some is negative, while to others it is positive

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<sup>2</sup> Item 16 was reverse coded.



**7. Do you know of a friend who is a gay man?**

- Yes
- No

**8. If yes, indicate:**

The relationship I have with my gay friend tends to be:

- Positive
- Negative
- Neutral
- I have more than one gay family member, and the relationship to some is negative, while to others it is positive

**9. Do you know of an acquaintance who is a lesbian woman?**

- Yes
- No

**10. If yes, indicate:**

The relationship I have with my lesbian acquaintance tends to be:

- Positive
- Negative
- Neutral
- I have more than one lesbian acquaintance, and the relationship to some is negative, while to others it is positive

**11. Do you know of an acquaintance who is a gay man?**

- Yes
- No

**12. If yes, indicate:**

The relationship I have with my gay acquaintance tends to be:

- Positive
- Negative
- Neutral
- I have more than one gay acquaintance, and the relationship to some is negative, while to others it is positive

## APPENDIX D

Attitudes towards Lesbians and Gay Men Scale (ATLG-R) (Herek, 1994) <sup>3</sup>

In this section, indicate to which extent you agree or disagree with the following statements, from 1 (“strongly disagree”) to 9 (“strongly agree”).

1	2	3	4	5	6	7	8	9
Strongly disagree					Strongly Agree			

1. I think male homosexuals are disgusting.	1	2	3	4	5	6	7	8	9
2. Male homosexuality is a perversion.	1	2	3	4	5	6	7	8	9
3. Male homosexuality is a natural expression of sexuality in men.	1	2	3	4	5	6	7	8	9
4. Sex between two men is just plain wrong.	1	2	3	4	5	6	7	8	9
5. Male homosexuality is merely a different sexual orientation that should <u>not</u> be condemned.	1	2	3	4	5	6	7	8	9
6. I think lesbians are disgusting.	1	2	3	4	5	6	7	8	9
7. Female homosexuality is a perversion.	1	2	3	4	5	6	7	8	9
8. Female homosexuality is a natural expression of sexuality in women.	1	2	3	4	5	6	7	8	9
9. Sex between two women is just plain wrong.	1	2	3	4	5	6	7	8	9
10. Female homosexuality is merely a different sexual orientation that should not be condemned.	1	2	3	4	5	6	7	8	9

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<sup>3</sup> Items 3, 5, 7, and 10 were reverse coded.

## APPENDIX E

### Gender Role Beliefs Scale (GRBS) (Brown & Gladstone, 2012)<sup>4</sup>

Indicate the extent to which you agree or disagree with the following statements.

1	2	3	4	5	5	7
Strongly Disagree						Strongly Agree

1. It is disrespectful for men in particular to swear in the presence of a woman.	1	2	3	4	5	6	7
2. The initiative in dating should usually come from the man.	1	2	3	4	5	6	7
3. Women should have as much sexual freedom as men.	1	2	3	4	5	6	7
4. Women with children should not work outside the home if they don't have to financially.	1	2	3	4	5	6	7
5. The husband should be regarded as the legal representative of the family group in all matters of law.	1	2	3	4	5	6	7
6. Except perhaps in very special circumstances, a man should never allow a woman to pay the taxi, buy the tickets, or pay the check.	1	2	3	4	5	6	7
7. Men in particular should continue to show courtesies to women such as holding open the door or helping them on with their coats.	1	2	3	4	5	6	7
8. It is ridiculous for a woman to run (operate) a train.	1	2	3	4	5	6	7
9. It is ridiculous for a man to sew clothes.	1	2	3	4	5	6	7
10. Women should be concerned with their duties of childbearing and housetending (being a housewife), rather than with the desires for professional and business careers.	1	2	3	4	5	6	7
11. Swearing and obscenity is more repulsive in the speech of a woman than a man.	1	2	3	4	5	6	7

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<sup>4</sup> Item 3 was reverse coded.

## APPENDIX F

### The Centrality of Religiosity Scale (Huber & Huber, 2012)

1. How often do you think about religious issues?  
1 (never) 2 (rarely) 3(occasionally) 4(often) 5(very often)
2. To what extent do you believe that God or something divine exists?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
3. How often do you take part in religious services?  
1 (never) 2 (rarely) 3(occasionally) 4(often) 5(very often)
4. How often do you pray?  
1 (never) 2 (rarely) 3(occasionally) 4(often) 5(very often)
5. How often do you experience situations in which you have the feeling that God or something divine intervenes in your life?  
1 (never) 2 (rarely) 3(occasionally) 4(often) 5(very often)
6. How interested are you in learning more about religious topics?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
7. To what extend do you believe in an afterlife—e.g. immortality of the soul, resurrection of the dead or reincarnation?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
8. How important is to take part in religious services (e.g. mass, taraweeh prayers...)?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
9. How important is personal prayer for you?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
10. How often do you experience situations in which you have the feeling that God or something divine wants to communicate or to reveal something to you?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
11. How often do you keep yourself informed about religious questions through radio, television, internet, newspapers, or books?  
1 (never) 2 (rarely) 3(occasionally) 4(often) 5(very often)

12. In your opinion, how probable is it that a higher power really exists?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
13. How important is it for you to be connected to a religious community?  
1 (not at all) 2 (not very much) 3(moderately) 4(quite a bit) 5(very much so)
14. How often do you pray spontaneously when inspired by daily situations?  
1 (never) 2 (rarely) 3(occasionally) 4(often) 5(very often)
15. How often do you experience situations in which you have the feeling that God or something divine is present?  
1 (never) 2 (rarely) 3(occasionally) 4(often) 5(very often)

## APPENDIX G

### Big Five Inventory, Openness Subscale (BFI; John & Srivastava, 1999)<sup>5</sup>

Here are a number of characteristics that may or may not apply to you. Please indicate the extent to which you agree or disagree with that statement, from 1 “strongly disagree” to 5 “strongly agree”.

	1	2	3	4	5
	Strongly Disagree				Strongly Agree
I see myself as someone who...					
1. Is original, comes up with new ideas.	1	2	3	4	5
2. Is curious about many different things.	1	2	3	4	5
3. Is ingenious, a deep thinker.	1	2	3	4	5
4. Has an active imagination.	1	2	3	4	5
5. Is inventive.	1	2	3	4	5
6. Values artistic, aesthetic experiences.	1	2	3	4	5
7. Prefers work that is routine.	1	2	3	4	5
8. Likes to reflect, play with ideas.	1	2	3	4	5
9. Has few artistic interests.	1	2	3	4	5
10. Is sophisticated in art, music, or literature.	1	2	3	4	5

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<sup>5</sup> Items 7 and 9 were reverse scored.

## APPENDIX H

### Short Forms of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982)<sup>6</sup>

Please indicate whether the following statements are true or false for you.

1. It is sometimes hard for me to go on with my work if I am not encouraged.	True	False
2. I sometimes feel resentful when I don't get my way.	True	False
3. On a few occasions, I have given up doing something because I thought too little of my ability.	True	False
4. There have been times when I felt like rebelling against people in authority even though I knew they were right.	True	False
5. No matter who I'm talking to, I'm always a good listener.	True	False
6. There have been occasions when I took advantage of someone.	True	False
7. I'm always willing to admit it when I make a mistake.	True	False
8. I sometimes try to get even rather than forgive and forget.	True	False
9. I am always courteous, even to people who are disagreeable.	True	False
10. I have never been irked (bothered) when people expressed ideas very different from my own.	True	False
11. There have been times when I was quite jealous of the good fortune of others.	True	False
12. I am sometimes irritated by people who ask favors of me.	True	False
13. I never deliberately said something that hurt someone's feelings.	True	False

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<sup>6</sup> Items 1, 2, 3, 4, 6, 8, 11, and 12 were reverse coded.

Table 1

*Reliability of the Scales and Subscales: Chronbach's alpha*

Scales and Subscales	Chronbach's alpha	N of items
Contact with a Lesbian or Gay Man	.74	4
Attitude towards Lesbians and Gay Men	.79	10
Gender Role Beliefs Scale	.82	11
Centrality of Religiosity Scale	.94	15
Private Religiosity	.90	5
Public Religiosity	.88	5
Religious/Spiritual Experience	.90	5
Openness to Experience Subscale	.61	10
Social Desirability	.54	13



Table 2

*Demographic Information of Participants*

	Demographics	Frequency	Valid Percent
<b>Gender</b>			
Valid	Male	98	35.4
	Female	179	64.6
<b>Year at university</b>			
Valid	Freshman	43	15.4
	Sophomore	164	58.6
	Junior	58	20.7
	Senior	15	5.4
<b>Household Income</b>			
Valid	Less than \$1,000	6	2.2
	\$1,000-2,999	50	18.0
	\$3,000-4,999	38	13.7
	\$5,000-\$6,999	21	7.6
	\$7,000 or more	50	18.0
	Prefer not to say	29	10.4
	Don't know	84	30.2

Table 3

*Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation
Article 534	279	1	5	2.84	1.39
Overall Religiosity	273	3	15	9.47	3.39
Perceived norms – Students	280	1	5	3.12	0.89
Perceived norms – Society at Large	280	1	5	2.93	1.30
Private Religiosity	279	1	5	3.29	1.30
Public Religiosity	278	1	5	2.91	1.17
Religious/Spiritual Experience	278	1	5	3.29	1.24
Overall Contact Score	268	5	33	16.80	6.35
Amount of Contact	272	0	6	1.64	1.49
Quality of Contact	270	0	24	4.51	4.56
Attitudes towards Lesbians and Gay men	272	10	82	47.07	17.79
Gender Role Beliefs Scale	273	11	62	32.25	11.25
Openness	275	25	50	36.91	4.43
Social Desirability	273	1	2	1.51	0.18
Valid N (listwise)	238				

Table 4

*Zero Order Correlation Matrix*

	Attitudes towards Lesbians and Gay Men
Contact with Lesbians and Gay men	-.52** <sup>rs</sup>
Gender (Male=1, Female=2)	-.21**
Gender Role Beliefs	.59**
Overall Religiosity	.54**
Private Religiosity	.50**
Public Religiosity	.52**
Religious/Spiritual Experiences	.47**
Openness to Experience	-.13*
Age	-.01
Year at University	.03
Household Income	-.14*

\*. Correlation is significant at the 0.05 level (one-tailed).

\*\* . Correlation is significant at the 0.001 level (one-tailed).

<sup>rs</sup>. Spearman's rho coefficient.

Table 5

*R, R Square, Adjusted R Square*

Model	R		Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
	R Square	R Square			R Square Change	F Change	df1	df2	Sig. F Change	
1	.72	.52	.51	12.44	.59	32.31	8	235	.00	1.88

Table 6  
*Regression Parameters*

Model		<i>B</i>	<i>SE B</i>	<i>β</i>
1	(Constant)	18.666	23.043	
	Gender Role Beliefs	.528	.089	.332
	Openness	.184	.188	.045
	Age	-.189	1.257	-.009
	Gender	-2.659	1.882	-.071
	Overall Religiosity	1.869	.275	.354
	Year at university	.772	1.491	.032
	Household Income	-.613	.417	-.068
	Contact	-.878	.201	-.229

a. Dependent Variable: Attitudes towards Lesbians and Gay Men  
 Note: \*\*  $p < .001$

Figure 1

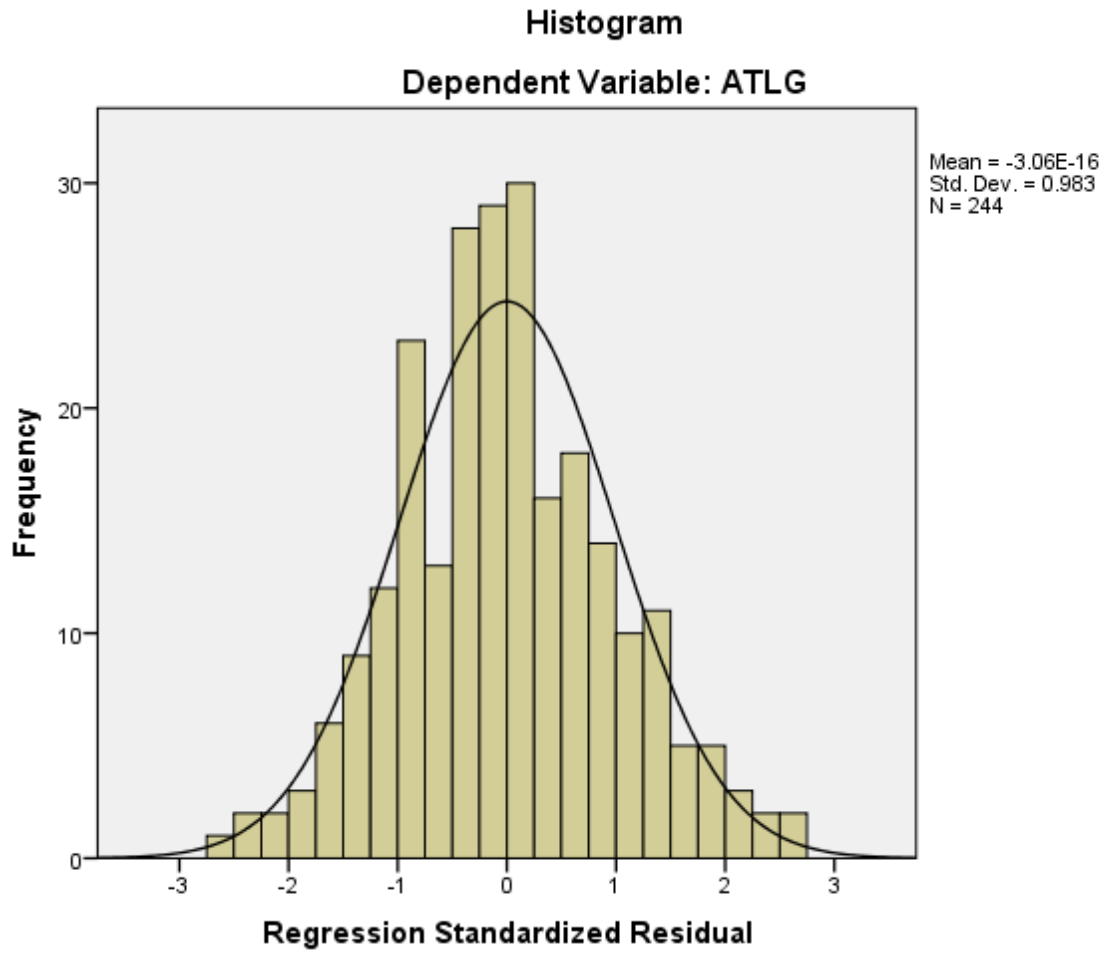


Figure 2

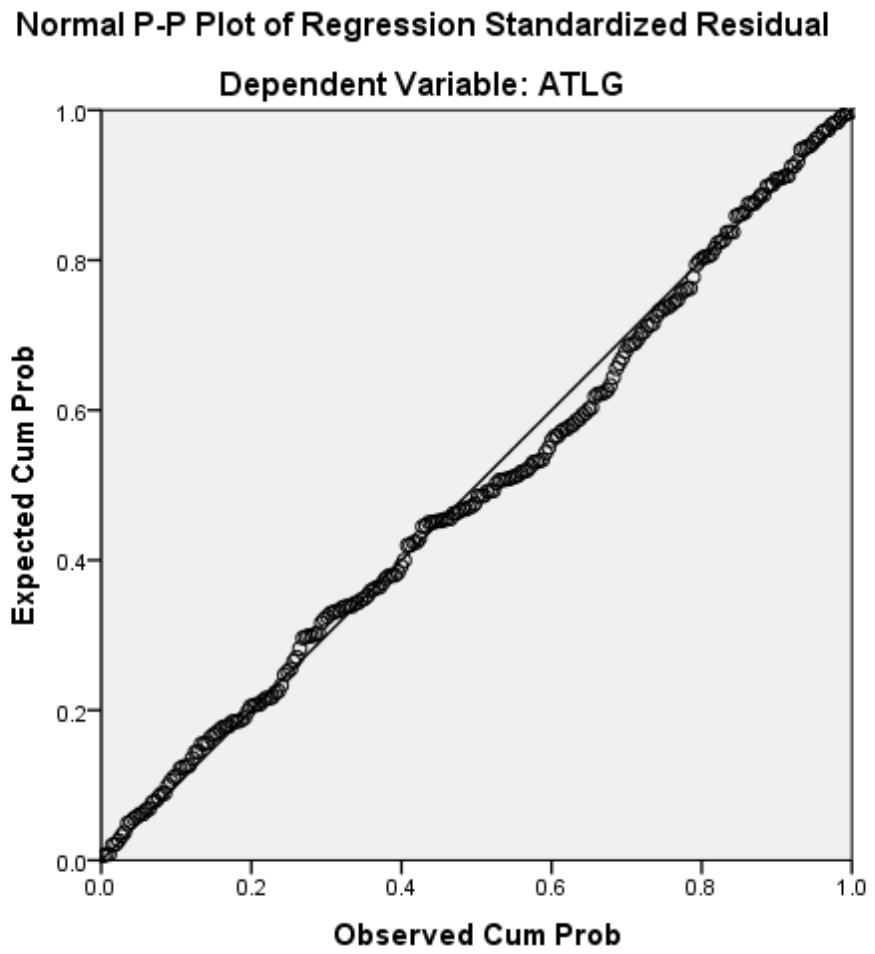


Figure 3

