

Gender Code-Switching in Economics and Finance

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Abstract

We study if code-switching, that is women's tendency to use more masculine expressions, affects their choice to major in Economics and Finance. Individuals identifying as more masculine are more likely to major in Economics and Finance, with the effect being twice as large for women as it is for men. Results indicate women who act more masculine are the ones that are "let-in" the field, and or, women become more proficient in code-switching in order to "fit-in" in the field. The costs of code-switching are disproportionately large for women and can partially explain their misrepresentation in the field. Gender code-switching results in increased stress and burnout, causing a lower sense of job satisfaction and higher rates of sapping. Ultimately, the field of Economics and Finance loses talent and diversity, which has negative consequences for socioeconomic growth and development. Policies that promote real inclusivity, rather than just equal representation among genders, are imperative to mitigate the negative effects of code-switching and promote actual equity in the workplace. By promoting inclusive workplaces and creating opportunities for women and other minority individuals to thrive in these fields, we will be able to advance social sciences and make better public policy that actually improves social outcomes.

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Keywords

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Introduction

President Obama shakes the hand of a white assistant basketball coach and a moment later grips Kevin Durant's hand, draws him close, and pats him on the back in a gesture that almost resembles a hug. Obama, using these two greetings when meeting with the US Men's Olympic Basketball team in 2012, is evidence of code-switching in our highest ranks. Code-Switching (CS) is often deemed necessary for success, and the former US president using it is evidence to that effect.

W. E. B. Du Bois was among the first to conceptualize the idea of code-switching. In his book "The Souls of Black Folk", he mentions the phrase "double conscience" to refer to the sense that Black individuals experience when they view themselves through the eyes of others (Du Bois, 1986). Similarly, the pioneering work of Erving Goffman suggests that humans try to present ourselves to others in the way we would like to be perceived while we consciously trying to reduce any stigma related to our identity (Goffman, 1981; Burns et al., 2009). Although CS emerged in the field of linguistics and defines one's ability to switch among languages, dialects, and manners during a conversation (Barker, 1947), it is now an impression management strategy that is expanded to include a general switch in behavior at certain social set ups (McCluney et al., 2021). More broadly, CS refers to the behavioral alterations made to increase others' comfort and optimize the returns of an interaction, involving changes in mannerism,

clothing, hairstyle, voice, and language, among others (McCluney et al., 2021; Dickens & Chavez, 2018; Ali et al., 2017; Anicich & Hirsch, 2017).

When there are negative perceptions associated with an individual's inherent characteristics, the individual may code-switch to minimize the impact of those perceptions (Roberts et al., 2014; Roberts, 2005). To that extent, the individuals that may be compelled to code-switch the most, belong to historically underrepresented communities and stigmatized groups (Kang et al., 2016; Hewlin, 2009). Ex-offenders that employ remorse for their offenses when communicating with potential employers are more likely to be hired for work compared to the ex-offenders that use excuses (Ali et al., 2017). Black individuals who code-switch at work are considered more professional than those who don't (McCluney et al., 2021).

Incipient literature demonstrates that personality and workplace compatibility in terms of culture and values play a decisive role in the hiring and retaining decisions of employees (Bangerter et al., 2012; Hoffman & Woehr, 2006). Therefore, job candidates adjust their behavior, in other words, they code-switch, to "fit in" to the organization's culture, despite that adjustment not being representative of their personality (Roulin & Krings, 2020; Roulin et al., 2016). Much of the CS in the workplace research focuses on the behavioral adjustments ethnic minorities make to succeed in a white-dominated

workplace (McCluney et al., 2021; Dickens & Chavez, 2018; Swencionis et al., 2017; Rivera, 2012).

Although, sexism in the workplace is real (Rivera & Tilcsik, 2016; Krasas, 2018; Heilman, 2001) and well documented among popular press (Tankersley and Scheiber, 2018; Wu, 2018; Wolfers, 2015), with a few exceptions not much research has been conducted on understanding how women code-switch in the marketplace (Halley, 2020), and even more within the male dominated fields of Economics and Finance (EF), especially at the top of the ladder.

The costs of code-switching are numerous and well documented—it affects not only psychological but also physical health (Dickens & Chavez, 2018; Moore et al., 2017). Constantly employing impression management tactics can be draining and unsustainable (Vohs & Braumeister, 2004), reducing one’s ability to control themselves (Klotz et al., 2018). This study explores whether identifying oneself with more “masculine” attributes is more common among EF majors and even more pronounced among the women of the field. One could argue that women feel a greater pressure to have more male attributes when involved in EF that makes them code-switch, or that the women who self-select in the major are different in masculinity traits from the women who don’t.

This study shows that identifying with more masculine personality traits is positively correlated with majoring in EF, and the effect is stronger when it comes to women. While men present more masculinity than women among non-EF majors, the opposite is true for EF. A possible explanation is that women who select to major in EF code-switch in order to fit in a male dominant field or that women who actually act more masculine are the ones that are drawn to the EF fields. Gender code-switching can cause burnout (Kruml and Gedes, 2000) and potentially increase women’s drop-out rate in EF (Hewlin, 2009). It is time for our field to promote transparency and accountability to advance the creation of a more supportive and inclusive environment for women and other minority groups, thereby improve job retention and policymaking.

Code-Switching in EF

The distinct gender gap in EF jobs may make gender code-switching essential to success. Wolfers reported in the New York Times in 2015 that among Fortune 500 companies, there were fewer women CEOs than CEOs named John. Although the rate of women leading U.S.’s top companies has doubled since 2010, it is still below 6%. Only 4 % of the largest 50 U.S. hedge funds have female investment executives (Copeland, 2018). The costs of code-switching for women in EF related jobs may be substantial, and the intersection of gender and race could make that cost for women of color almost insurmountable.

There are several reasons women may not move through the career ranks in EF related fields as their male counterparts do (Shinall, 2018; McDaniel, 2016). One of them could be code-switching (McCluney et al., 2019). Code-switching

might be the adaptive response to avoid discrimination against positive evaluation, promotion, and career advancement. For example, job candidates that are encouraged to reveal their racial identity in job advertisements that promote diversity are being penalized when they actually do so (Kang et al., 2016). Job candidates with White sounding names are 50% more likely to be interviewed by employers than job candidates with Black sounding names (Bertrand & Mullainathan, 2004). Similar are the findings by Oreopoulos (2011) for different ethnic groups.

The newsworthy studies include an examination of an anonymous job-rumor forum in Economics and message board that revealed women are often described in sexual and crude terms by their peers (Tankersley and Scheiber, 2018; Wu, 2017). This has all led to what the New York Times deems the “#MeToo Reckoning” in economics. However, this is the first study to measure gender code-switching of women in male-dominated fields such as in (EF) proxied by a measure of self-reported answers that identify masculinity behavior. Women may find it necessary to act more aggressively or engage in conversations about sports, even if neither comes naturally (Roulin & Krings, 2020). We study how choosing to major in Economics and Finance (EF) relates to code-switching among young women.

Code-switching may be a way to bypass gender discrimination on two levels. First, if individuals are discriminating along the dimension of stereotypical male characteristics, code-switching can mask true personality to disable that discrimination. Potentially women who are code-switching to fit in EF are the ones that are “let” in the field. Code-switching among women in EF may come from selection — being a successful code-switcher would make you more likely to choose EF. Second, code-switching imposes costs for women in male-dominated professions that perceive they need to adjust to “fit in”.

Student teaching evaluations are biased against women educators in EF, indicating discrimination may not be limited to superiors evaluating performance but also exists in 360 reviews (Felkey and Batz-Barbarich 2021). If a woman wants to achieve promotion, she will strive to act according to the desired personality norms in her work (Moss-Racusin et al. 2012; Rudman and Phelan 2008), and the tolls of code-switching will grow. Consecutively, some women will stop seeking advancement, as the cost-benefit analysis no longer deems it is worthwhile, and potentially opt-out of such work environments. The consequences of emotional exhaustion that CS might create can potentially be resolved by resigning from such an environment (Hewlin, 2009). Accordingly, women who are adapting to fit in once they choose it may become more proficient at code-switching.

Hypotheses, Data & Results

In order to more precisely understand how EF majors differ from those who do not choose EF, and if women who opt-in EF might express themselves with more masculine behaviors

as a form of code-switching, we test the following hypotheses:

H1. Individuals claiming more masculine behavior are more likely to major in EF

H2. The effect of claiming masculine behavior on the choice of major in EF is greater for women than men, indicating the need for code-switching for the females in the field

We collected data about major choice, gender of personality traits, and personal characteristics among undergraduates from the United States with a \$4.80 incentivized online survey (see the full survey in [Appendix A](#), pages 2-49) on the Prolific platform in the fall of 2020. Respondents were at least 18 years old with undergraduate student status in Higher Education. We excluded potentially unreliable observations by removing responses that did not comply with the quality control questions (see [Appendix A](#), Q97 on page 26, and Q98 on page 44), or were completed in less than 5 minutes, ending up with 247 undergraduate students. In our sample, the average age is 22, 120 are females, 126 males, and 1 selected “other” for birth-assigned gender. Our sample contained 60 student who have declared EF majors.

The questionnaire consists of several variables, but we focus on standard (1) Socio-Demographics; and the (2) Personal Attributes Questionnaire (PAQ). The PAQ developed by Spence et al. (1979) measures whether stereotypically feminine and masculine personality traits are expressed by the respondent. Because the traits are narrowly defined, the PAQ should be treated as a measure of expressiveness. PAQ is a well-established adjective-based scale that has been widely used in research (Kachel et al., 2016; Eagly and Karau, 2002; Collins and Read, 1990). Because individuals identify whether they act in a way that is stereotypical of one gender or another we can couple the information with their actual gender and identify code-switching. For example, if female respondents identify themselves as more “masculine”, this can be an indication of code-switching.

“The Personal Attributes Questionnaire consists of three subscales, Masculine, Feminine and Masculine-Feminine for a total of 24 items (see [Appendix A](#), pages 33-42). Because we are interested in women’s code-switching behavior in male-dominated fields, we focus on PAQ’s masculinity subscale and study how identifying you acting more “masculine” correlates with being an EF major. The PAQ-Masculinity Subscale consists of 8 items, which ask participants to rate how well certain statements describe them on a 5-point scale, ranging from “not at all true of me” to “very true of me.” If they don’t agree with neither of the extremes (0 or 5) they would respond with a 2. Scores on the PAQ-Masculinity Subscale are obtained by summing up each item’s score. Thus, the values on each subscale range between 0 to 32. Any score above 24 defines an individual that identifies more with traditional masculinity.

The items subjects are asked to identify themselves with are: how independent they are, how passive they are, how

competitive they are, how easily they can make decisions, how easily they give up, how self-confident they are, how inferior they feel, how well they do under pressure. Whether responses indicate a real personality trait or a desire about one’s personality, it is an indication of code-switching. For example, if one thinks being “independent” enhances career success, he/she may claim to be so, regardless of whether he/she possesses that attribute or not. Individuals may want to act more masculine, and in the case of women, they could be code-switching. For more details on the construct of PAQ, please refer to Table B.1 on page 50, in the [Appendix B](#).” Table 1 summarizes the responses for the entire sample, as well as for EF majors and those who majored in neither of those fields, separately. The last column of the Table reports the results of non-parametric testing of differences between the two distributions of EF majors vs. non-EF majors.

- See [Table 1](#).

PAQ scores between 0-23 indicate low masculinity, while scores 24-32 are high. The average masculinity sub-score for all respondents is right at that threshold. However, EF majors have an average PAQ-masculinity score larger than that of non-EF-majors at the 1% level of significance. While men have higher masculinity scores than women among non-EF majors, the opposite is true for EF. EF women have a higher PAQ-masculinity score suggesting they identify with more male personality traits than women in other disciplines, perhaps because of code-switching.

Among the EF majors, 42 identify as male and 18 as female. The female EF majors have a slightly higher average PAQ score (P-Value = 0.1556) than their male counterparts. Females majoring in EF have a significantly higher PAQ score (P-Value = 0.0020) and the variance of scores is much smaller. None of the scores are more than 2.5 standard deviations away from the mean, so there are no outliers distorting the analysis.

We complement the non-parametric testing in Table 1 and employ probit regressions. The regressions predict the likelihood of having chosen to be an EF major controlling for : a) *socio-demographic variables*: age, gender, race, household income, household location, parents’ education; b) *high school experience variables*: learning disabilities (with math, emotions, and dyslexia), college prep curriculum, and the extracurricular activities: choir, woodworking, crafts, ballet, painting, math and science club; c) *family gender dynamics’ variables*: three dummy variables equal to 1 if the respondent’s mother was the major breadwinner, if the family member they most admire is female, and if their mother typically did the housework. Variables in (b) and (c) are employed to control the development of gendered personality traits.

Table 2 summarizes the correlation between PAQ-masculinity scores and being an EF major with several sets of control variables. Each cell in the table represents a unique regression, so the table reports the PAQ-masculinity score coefficients for 24 specifications of our model. The rows in the table indicate what controls were used and the columns indicate the sample.

For example, the first reported coefficient shows with no control variables the PAQ-masculinity score positively affects the likelihood an individual chose the EF majors among everyone in the sample.

Controls	Total N=247	Women N=120	Men N=126
None (0.024)	0.098*** (0.042)	0.121*** (0.032)	0.091***
Socio-demographics	0.106*** (0.026)	0.168*** (0.053)	0.087** (0.034)
Family Dynamics	0.116*** (0.028)	0.127*** (0.046)	0.115*** (0.037)
High School Experience	0.118*** (0.026)	0.144*** (0.047)	0.121*** (0.037)
Socio-demographics and Family Dynamics	0.124*** (0.030)	0.169*** (0.058)	0.119*** (0.040)
Socio-demographics and High School Experience	0.129*** (0.029)	0.191*** (0.061)	0.122*** (0.039)
All controls	0.148*** (0.032)	0.220*** (0.075)	0.179*** (0.051)
Lewbel IV Method	0.030*** (0.009)	0.011 (0.016)	0.038*** (0.010)

Note: Standard errors are in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Table 2. Estimated Correlations Between Being an EF Major and PAQ-Masculinity

We find that identifying with more masculine personality traits is positively correlated with pursuing an EF major, which is in favor to H1, and the effect may be stronger for women that is in favor to H2. Notably, the coefficient for PAQ-masculinity is nearly twice as large for women as it is for men. It may be even more important for women to identify with more masculine attributes when majoring in EF, providing evidence of code-switching, where women feel a greater pressure to have more male attributes. Code-switching may be important for the success of women in these types of jobs. Another explanation can be that the women who choose to major in EF, are the ones that already have more masculinity traits compared to women that do not.

The positive and significant correlation of PAQ-masculinity with choosing EF is robust, even when controlling for high school experiences and family gender dynamics. However, the measurement of PAQ-masculinity might suffer from endogeneity. Reverse causality may arise in the sense that EF makes one acquire more masculine traits due to confirma-

tory bias while studying in EF. One avenue to address this problem is by using an IV method with instruments for PAQ-masculinity by following the Lewbel (2012) approach. The Lewbel (2012) approach artificially generates instruments from the set of explanatory variables.¹ The approach provides less efficient results compared to a standard IV estimator; however, it is considered to work well with empirical data. Indeed, as we see in the last row of table 2, coefficients become much smaller, with the results becoming insignificant for women. Results in favor of H1 remain robust with the Lewbel approach but cast a doubt on H2. To resolve this matter, we plan to acquire a much larger sample in a future study, where we will be able to compare PAQ scores between freshmen and senior students across the two birth-assigned genders.

Discussion & Future Work

This analysis finds that indicating you have more masculine personality traits is positively correlated with pursuing an EF major, and the effect is stronger when it comes to women. The finding is robust to several specifications with an array of controls, including sociodemographic variables, personal characteristics, family situation, and high school experience. However, our analysis does not show causality. To determine causality experimental and longitudinal studies are needed. We presume that this is an indication that women who select to major in EF might need to code-switch to fit in a field whose participants are holding a more “masculine” behavior. Individuals could be learning to be more masculine or, for women, becoming proficient in code-switching as a result of navigating the EF fields. It might also be the case that women who actually behave more masculine are the ones that are drawn to the EF fields, and self-select. Individuals with more masculine personality attributes might feel more comfortable in EF courses and be more likely to choose these majors.

This finding calls for more research as it is important to understand if (1) only women with more masculine personalities enter the EF field, (2) women who enter the EF field take on more masculine traits as a result of studying in the male-dominated environment or (3) if women are merely indicating they have masculine personality traits (when in fact they do not) as an adaptive mechanism to help them fit in better among men in the EF field. In that extent, an experiment could be designed that would help us elicit whether women in the EF fields code-switch or not. Similarly, a survey that examines racial CS developed by Durkee et al. (in preparation) could be adapted to gender CS. Furthermore, a longitudinal study could be implemented to understand how these biases

¹This is a 2SLS estimator. Consider the regression $y = x_1\beta_1 + x_2\beta_2 + \varepsilon$ where y is the dependent variable, x_1 and x_2 are the sets of exogenous and endogenous explanatory variables, respectively, ε is the error term and β_1 ; β_2 are the unknown parameters. The Lewbel approach creates instruments $z = (x_1 - \bar{x}_1)\varepsilon$ from the product between the exogenous variables in mean centered form, $x_1 - \bar{x}_1$, and the residuals ε from the first-stage regression $x_2 = x_1\gamma_1 + \eta$. It should be noted that the method is less efficient than a standard IV method (Buccioli et al., 2021).

change over time spent studying EF. Tracking individuals' masculinity prior to entering the field and reexamining them when they finish their studies, will help us shed light to the idea of self-selection in EF. However, if the biases witnessed in the profession increase with the duration of study in these fields, we need to reexamine our curriculum and its delivery especially at the introductory level. This will afford the field opportunity to evaluate current practices that are bias enhancing and strategically develop interventions that will improve inclusivity and equality in Economics and Finance.

While we do not yet know whether code-switching causes some women to select into EF or simply incur additional costs once they do, it does inhibit gender diversity in the EF fields. The latter impedes development at the corporate and the social level and extends beyond the boundaries of the field. The occupational integration of women in corporations increases innovation and overall performance (Joecks et al. 2013), as well as economic growth (Hsieh et al. 2019), and gender representation increases collective intelligence (Woolley et al. 2010). Female economists' approach to policymaking differs from their male colleagues, and their decisions are more likely to favor an equitable approach (Kahn and Ginther 2017). The Public Policy professor at Cambridge University, Diane Coyle, describes the negative consequences of this gender inequality as: "You can't do good social science if you're so unrepresentative of society."

Kruml and Gedes (2000) suggest that emotional labor, that is the management of one's emotions in order to fit with their organization's culture, may lead to burnout. Incipient literature on racial code-switching suggests that code-switching has severe emotional, psychological, and physical effects for the ones engaging in such a behavior (McCluney et al. 2021). The perceived or real need to code-switch may produce job stress that is disproportionately felt by women in EF that are numerically dominated by men. Hewlin (2009) shows that emotional exhaustion is a mediator between conforming to an organizational culture and the intention to leave that organization. This could partially explain why women are leaving the fields of economics and finance.

Alleviating the need for code-switching would theoretically keep more women in the field. Decreasing code-switching costs would enhance representation in EF and mitigate the need to code-switch. The other way around could be also true. Imposing female quotas on the executive boards of companies will increase female representativeness. Women should be expected to feel more comfortable in a more equitable environment, decreasing the need for code-switching and further reinforcing their retainment. Several studies have shown the efficacy of female mentoring and networking in attracting and retaining females in the discipline (Porter and Serra 2020; Ginther et al. 2020; Avilova and Goldin 2018; Meschitti and Lawton-Smith 2017; Blau et al. 2010; Croson and McGoldrick 2007). More women staying in EF jobs will mitigate the effects of availability bias and diminish the perceived need for code-switching, reinforcing better gender representation.

The effects of the Covid-19 pandemic were disproportionately larger for women. Torres et al. (2023) show that businesses led by women in some domains, such as in countries that were hit harder by Covid-19, or in the health industry, or in smaller businesses, suffered much larger losses than those led by men. Despite that, these women led businesses received a much smaller piece of the available public support. During lockdown, women in academia carried a much bigger burden in childcare and housework compared to men, negatively affecting their scholarship and publications (Deryugina et al. 2021; Yildirim and Eslen-Ziya 2021). The psychological dimensions of the lockdown seem to differentially affect women's well-being as well. Attanasi et al. (2021) show that during the lockdown, women's behavioral responses to diet habits and smartphone usage worsened much more than those of men.

Covid-19 has highlighted and widened the existing gender inequalities in several areas. There is a significant increase in unpaid care work, which has further limited women's opportunities for paid employment and career advancement. Women might feel an extra pressure to code-switch to advance their careers and compensate for the larger gap they have been subjected to during the pandemic. The exacerbated need for conformity to the dominant culture might increase the drop-out rate of women in EF. For future research we propose to examine whether the effects of Covid-19 increased gender code-switching within EF, with the goal of contributing to the ongoing dialogue about gender equity and workplace diversity.

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	Definition	Economics Total	Non-Economics and Finance Majors	Mann-Whitney and Finance Majors	Test
		Mean (s.d.)	Mean (s.d.)	Mean (s.d.)	P-Value
EF major	=1 if the individual majored in either Economics or Finance in college	0.2441 (0.430)	- -	- -	
PAQ-Masculine	The Masculine Personality Attributes score	23.71 (5.267)	26.16 (3.133)	23.16 (5.085)	0.0001
Age	The respondent's age in years	22.25 (4.726)	21.32 (2.764)	22.55 (5.174)	0.3310
Male	=1 if male	0.525 (0.500)	0.714 (0.455)	0.464 (0.500)	0.0008
White	=1 if white	0.467 (0.500)	0.581 (0.497)	0.431 (0.496)	0.0662
Mom Breadwinner	=1 if mother was the household breadwinner while growing up	0.103 (0.305)	0.036 (0.187)	0.124 (0.331)	0.0818
Admire Woman	=1 if the family member most admired is a woman	0.518 (0.501)	0.413 (0.496)	0.552 (0.499)	0.0268
High Class	=1 if while growing up the household income was > \$100,000	0.300 (0.459)	0.349 (0.481)	0.287 (0.454)	0.2890
Math Problem	=1 if a grade school teacher identified the individual had problems with math	0.093 (0.291)	0.079 (0.272)	0.097 (0.297)	0.6782
Dyslexia	=1 if a grade school teacher identified the individual is dyslexic	0.023 (0.151)	0.032 (0.177)	0.021 (0.142)	0.6018
Emotional Problem*	=1 if a grade school teacher identified the individual had emotional problems	0.109 (0.312)	0.143 (0.353)	0.097 (0.297)	0.3045
Mom Time	=1 if spent most time with mom growing up	0.591 (0.493)	0.679 (0.471)	0.563 (0.497)	0.1654
Rural	=1 if lived in a rural area growing up	0.120 (0.326)	0.143 (0.353)	0.113 (0.317)	0.4940
Dad High Ed	=1 if father's education goes beyond college	0.238 (0.427)	0.206 (0.408)	0.241 (0.429)	0.7662
Mom High Ed	=1 if mother's education goes beyond college	0.196 (0.398)	0.175 (0.383)	0.195 (0.397)	0.6552
Housework	=1 if mother did NOT do most of the housework	0.245 (0.431)	0.232 (0.426)	0.249 (0.433)	0.6952
Expect Success	=1 if parents expected them to be successful	6.000 (1.262)	5.919 (1.178)	6.026 (1.290)	0.1807
College Prep	=1 if the individual took courses to prepare them for college during high school	0.581 (0.494)	0.698 (0.463)	0.544 (0.499)	0.0823
Choir	=1 if in a choir during high school	0.140 (0.347)	0.048 (0.215)	0.169 (0.376)	0.0195
Woodwork	=1 if did woodworking during high school	0.078 (0.268)	0.127 (0.336)	0.062 (0.241)	0.0881
Craft	=1 if learned a craft during high school	0.291 (0.455)	0.206 (0.408)	0.318 (0.467)	0.1246
Dance	=1 if danced during high school	0.066 (0.249)	0.079 (0.272)	0.062 (0.241)	0.5030
Paint	=1 if painted during high school	0.326 (0.470)	0.270 (0.447)	0.344 (0.476)	0.2463
Math Club	=1 if in a math and/or science club during high school	0.280 (0.450)	0.302 (0.463)	0.273 (0.447)	0.9551

(*) This data comes from the survey question "In primary or elementary school, were you or your parents ever told by a professional that you had any mental or emotional problems?"

Table 1. Summary Statistics