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Social Control Theory Indicators of Chinese University Students' Alcohol Consumption

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Abstract: This study tested a social control model on alcohol outcomes among Mainland Chinese university students. Respondents with close parental ties were less likely to consume alcohol and those that had close relationships with drinking/smoking friends, were more likely to. In addition, results indicated that students with positive school commitment and parental bonds were less likely to be currently or frequently drinking. Moreover, respondents attached to their university were related to lower levels of frequent drinking, while students who smoked cigarettes were associated with higher levels. The limitations of this study are also discussed.

Keywords: social control theory, social bond theory, China, delinquency, Hirschi

Introduction

Scholars have noted that alcohol is the most toxic consumed substance across all age groups (Brandão et al., 2011). However, investigators have asserted that primary relationships can reduce alcohol use or problem drinking (Ilhan et al., 2008). Of further concern is that despite the potential of social control theory to explain alcohol consumption and abuse, few tests in transnational settings exist. What makes the issue of alcohol consumption worthy of continuous study, is that this problem appears to be a characteristic of most societies (Messler et al., 2016). In terms of potential long-term effects, adolescent consumption of beer, wine, and hard liquor have been shown to predict later forms of alcohol abuse, risky sexual behavior, and damaged social bonds (Zebrak & Green, 2017).

Underscoring the importance of the issue is that alcohol abuse is common among university students (Cicognani & Zani, 2011; Ferrer et al., 2012). In fact, research

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has noted that American university students are among the heaviest drinking of any demographic (Huang et al., 2011). Further, problem or "binge drinking" (often defined as rapidly consuming 4-5 drinks), is also related to several disturbing outcomes; such as serious injury, death, antisocial behavior, and psychological problems (Martin et al., 2015). Since alcohol consumption by college enrollees is also problematic in other countries, it is unsurprising that unprotected sex, increased injury rates, and memory lapses are also common (Dumas, et al., 2013). Given these underlying issues, the main purpose of this research is to test social control theory's ability to explain types of alcohol consumption among Mainland Chinese university students. We begin by reviewing the literature addressing university student alcohol consumption and the extent to which social control theory has been utilized in explaining the problem.

Literature Review

In a comparison between college and non-college students, findings indicate that college student status was predictive of alcohol use and problem drinking (Barnes et al., 2010) and in fact, institutions of higher education in the U.S. report that their students are suffering from memory blackouts as a result of "pre-partying" (binge drinking that occurs prior to a planned event) (LaBrie et al., 2011). Other scholars argue that these types of activities typically spring from positive attitudes towards drinking, expectations, and experiences regarding alcohol consumption on campus (Herschl et al., 2012). Unfortunately, alcohol consumption appears to be no less frequent at international institutions of higher learning (El Ansari et al., 2014) as some research in Northern Germany suggests that prevalence among university students may be over 90% (Akmatov et al., 2011). Similarly, Welcome et al. (2011) reported that alcohol use was a bit over 90% among their sample of Slavic and Arabic university students in Belarus and that the Arabic students in the sample were more likely to engage in problem drinking. Moreover, Welcome et al. (2014) stated that alcohol consumption among Belarusian medical students resulted in lower cognitive and academic performance. In the end, it is no surprise that high levels of alcohol use may be related to student demographic groups (Conn et al., 2017) and their overall stress levels and behavior problems (Tavolacci et al., 2013).

Specifically, some have argued that males particularly, suffer at least one negative consequence as a result of drinking (Brandão et al., 2011). Others have posited that male college students are also more likely to both consume alcohol and engage in problem drinking (Barnes et al., 2010). However, in a study of female college students, investigators reported that both alcohol and drug consumption led to increased participation in risky sexual behavior patterns (Caldeira et al., 2009). A related area of research seems to imply that both male and female college students that consume

alcohol and marijuana before engaging in sexual activity, may also be at greater risk for contracting HIV (Staton et al., 1999).

Interestingly, international studies also seem to confirm domestic findings regarding the connections between alcohol use and abuse among males (Yi et al., 2017). Specific evidence from New Zealand and the United States also suggests that drinking to excess can lead to psychological impairment days after the drinking episode occurred, for both males and females (Polak & Conner 2012; Ranker & Lipson, 2022). Unsurprisingly, investigators have noted that those that rarely drink have a higher quality of life than those who do (Kisic-Tepavcevic et al., 2013). The problems related to alcohol consumption also appear to be important for university students that participate in team sports, at least in the UK (Partington et al., 2013). While this issue seems to be endemic to most societies, some scholars are also calling for Hirschi's social control theory to be tested more frequently in the Chinese context (McCaffery, 2018). Given the earlier reference to research suggesting that positive relationships may hamper alcohol consumption, it would appear that social control has some potential to explain the problem.

Hirschi distilled his thoughts on delinquency to a few broad assertions regarding why most people do not engage in it. Briefly, he argued that individuals refrain from crime because they are bound to society, and crime occurred when social bonds deteriorated. Additionally, the perspective also states that each of the bonds varies with the others and that the parental affectional tie is the most important. Essentially, the theory posits that positive parenting and parental supervision determine the strength of the bond. However, the bond itself is comprised of four essential arenas that Hirschi primarily borrowed from the writings of Emile Durkheim.

Specifically, attachment is a mechanism through which affection for others is expressed (Grindal et al., 2019). In theoretical terms, higher levels of attachment to parents, teachers, and peers, lead to lesser involvement in delinquency. Hirschi further provided that commitment referred to the desire to attain conventional goals, like a good education or well-paying employment, and that involvement (the third arena), was the amount of time spent by an individual pursuing such goals. The final arena of belief stood for the principle that acceding to prevailing moral and legal principles would prevent the desire to engage in delinquency. While Hirschi did not include a religious bond in his original formulation of the theory, he did separately test the hypothesis (Hirschi & Stark, 1969) and the subsequent argument that religiosity is inversely related to delinquency, has garnered support (Lalayants et al., 2020; Sabena et al., 2012). In making the connection between alcohol consumption, the paucity of research on this topic in the Chinese context, and the specification of the social bond, we now turn to a review of the social control literature examining the effects of the bond on alcohol use.

In a study that utilized data from the California Asian Student Drug Survey (ASDS -1995/1996), which was comprised of responses from 9th and 12th graders, Nagasawa et al. (2000) ascertained that family attachments played an important role in quelling alcohol use among Chinese and Asian Indian youth. Similarly, Reeb et al. (2015) found that a measure of family cohesion was inversely related to alcohol consumption in younger respondents. Additionally, Ennett and colleagues (2008) using longitudinal data from North Carolina school districts and the U.S. Census, found that various family variables were predictive of alcohol misuse among young people. Further, Moos and Moos (2007) reported that protective family bonds can insulate individuals against short and long-term negative alcohol outcomes.

In terms of international scholarship, Smorti and Guarneri (2015) articulated that the parental bond on Italian adolescents' rationales for alcohol use, was significant. For females, the maternal bond on rationales for alcohol use remained significant while for males, neither parental bond significantly influenced their rationales for alcohol use. In examining the alcohol consumption of high schoolers in Kyrgyzstan, Aliiaskarov and Bakiev (2014) determined that parental attachment decreased alcohol use. Finally, in using five waves of data from the Korean Youth Panel Study (2003-2008), Han et al. (2016) reported that parental and teacher attachment were associated with delays in the onset of alcohol consumption, while peer attachment was associated with earlier onset.

In contrast, Byrd (2016) reported that parental attachment *increased* the likelihood of overall drinking and binge drinking for college students. This interpretation gains further credibility as Chamova and Sarov (2015) found that Bulgarian adolescent social drinkers (aged 15-19), were more likely to have parents and friends that also consumed alcohol. Their results also indicated that mothers of social drinking adolescents were also more likely to be regular drinkers. These social drinkers were also more likely to receive offers to drink from their friends and parents. These findings suggest that social drinking among young people may be partly learned from those that are close to them. Relatedly, Aliiaskarov and Bakiev (2014) discovered that social learning variables and excessive parental control, increased alcohol consumption. Moreover, in a study conducted across nine Association of Southeast Asian Nations (ASEAN) countries, Yi et al. (2017) suggested that binge drinking is associated with older university students from difficult family backgrounds, who also have experienced depression, illicit drug and tobacco use, low levels of religious activity, and a poor understanding of the negative impacts of alcohol use.

With regard to school bonds and alcohol consumption among college students, the literature supports social control theory. More specifically, Ennet et al. (2008) reported that feelings of closeness to the school were important constraints on binge drinking and fighting associated with the drinking episode. Somewhat relatedly, Durkin et al.,

(2009) found that school commitment and GPA were important protective factors for getting sick or missing class as a result of excessive drinking. Durkin et al., (2007) also discovered that the same educational variables were also predictive of drinking and driving. Han et al. (2015) also found that positive educational aspiration served to delay the onset of alcohol consumption among Korean youth. Unexpectedly, Martins et al. (2017) found that school cohesion (school attachment) increased alcohol consumption among Brazilian middle-school students. In addition, alcohol misuse has also characterized incidence of risky driving (Bigham & Shope, 2004).

Unfortunately, few studies have examined the element of involvement and its role in explaining alcohol outcomes among college students. Interestingly, most of these investigations operationalize involvement as participation in school-related activities and sports. For example, Sun and Longazel (2008) found that engaging in university sporting activities were related to lower levels of drinking and driving and binge drinking. Additionally, in a meta-analysis examining the impact of college sports engagement and drug use, Lisha and Sussman (2010) reported that not only did participating in such activities lead to a greater likelihood of alcohol consumption, but also that such consumption may be influenced by peer attachment. Finally, while Brellenthin & Lee (2018) did not test bond theory, they reported that increased levels of general physical activity were associated with elevated levels of alcohol use and binge drinking.

Some investigations have also assessed whether conventional belief has any impact on college student alcohol consumption and abuse. More specifically, Krieger et al. (2018) found that both secular and religious beliefs played an important role in suppressing heavy drinking. Dunn and Wang (2003) also reported that religious beliefs may constrain binge drinking. Similarly, Ennet et al. (2008) found that high moral standards served to reduce alcohol misuse. In addition, Durkin et al.'s (2007) study of drunk driving and Han et al.'s (2015) study of general alcohol consumption, both found that conventional beliefs led to lower levels of involvement in both behaviors. Finally, Bingham et al. (2008) noted that drinking and driving was predicated by general alcohol misuse and tolerance of deviance among university students.

While these findings are noteworthy, the current study also provides a number of contributions to the literature. First, we sampled Mainland Chinese university students and queried them about their alcohol consumption. In so doing, we provide theoretical foundation for future research for this almost non-existent area of scholarship in China. Additionally, Hirschi argued that both conventional and delinquent peer attachment would result in a constraint on delinquency. Since subsequent research has informed that delinquent peer attachment fosters destructive behavior (Chen & Cheung, 2020), we include different peer variables to more clearly determine how the relationship works within social control theory, and we do so using an transnational sample, a rare

occurrence. Moreover, given the possibility that university student alcohol consumption is partially learned, it makes sense to include such variables. Further, given that it is now fairly common to assess the impact of religious variables in tests of Hirschi's theory (Guo & Metcalfe, 2018), we thought to address that issue here by asking respondents how many religious friends they had.

Method

Data

We collected a sample comprised of Chinese university students enrolled in two Mainland Chinese institutions, located in two separate provinces. The institutions were selected due to their access by one of the current authors. Law students were the focus of the study due to one author's contacts with the law schools of both institutions. Moreover, all potential respondents for this project were undergraduates. In Spring 2015, two of the authors initiated the Institutional Review Board (IRB) process at the institutions involved and submitted relevant materials for administrative approval. Once finalized, roughly 25-30 students at each Chinese institution were asked to take the survey and provide feedback. The commentary was forwarded to the author overseeing the Chinese IRB process, who then revised the survey from April-June 2015, with administrative approval for the study occurring in late June. We then ensured that the instrument would be posted to university sites that students could access via any device.

The sampling pool focused on students enrolled in classes offered by the law schools of the two Chinese universities, during their spring 2015 semesters. These courses dealt with Chinese practices regarding prosecution, evidence collection, admission of evidence, divorce procedures, administrative regulations, and civil law. We allowed for anyone enrolled in the classes to take the survey, which allowed for both law and non-law majors to participate. In an effort to address concerns that might arise about whether or not respondents might have filled out multiple surveys, our metadata includes internet protocol (ip) addresses, date of submission, type of device used, time stamps (in seconds), and location stamps, for each survey. No ip address is repeated and the time stamps indicate that questionnaires were completed in normal time frames. Moreover, Chinese government issued identification information must also be entered into a screen dialogue box for interaction with the web. So if students were trying to complete additional surveys, they would be easily identifiable by the institutional IRB.

Once the survey was posted, faculty announced in class that their students could participate voluntarily via whatever device they wished and at whatever location they chose. Potential respondents were also told that they could choose not to participate or discontinue their participation, at any time. Later in July, faculty again reminded

their students about the opportunity to complete the survey. Generally, about 800 potential respondents existed from University A and about 400 from University B. This process resulted in the collection of 701 cases; 511 cases from University A and 190 from University B. In terms of response rates, 511/800 from University A equates to a participation rate of 63.9%, while 190/400 from University B works out to 47.5%. For the two institutions combined, 511 + 190 = 701/1,200 or a response rate of 58.4%. Both institutions house a specific law school but each university also provides access to traditional majors. Each institution enrolls approximately 20,000-30,000 students, with more than one campus to accommodate them.

In terms of demographics, roughly 73% of the respondents indicated that they were enrolled at University A and approximately 67% of the overall sample was female. The age range of the respondents was approximately 17-28, with a few as high as 39. Further, about 50% of the sample is originally from urban areas, with an additional 15% from the suburbs and the remainder identifying as rural residents. Concerning income, approximately 25% of the respondents indicated that their families earned 20,000 yuan or less per year but about 50% of the sample reported that their families earned more than 95,000. The behavioral controls dealt with whether or not a respondent had ever smoked cigarettes or had sex. Since the research question was whether or not a social control model would explain various types of alcohol consumption, we developed the questionnaire with a desire to construct measures of parental, peer, and school attachments and various forms of commitment and belief. The specific items and their coding follow below.

Measures

Alcohol use and abuse. Including the traditional bond indicators, the peer measures, and the controls, resulted in three distinct mixed-regression equations. The dependent variables were, "Do you drink alcohol?" (1 = no, 2 = yes), "How often do you drink?" (1 = never to 6 = every day), and a summed "problem drinking index" ($\alpha = .63$), comprised of the following dichotomies: "Have you ever consumed alcohol and experienced a black out or memory loss?", "Have you ever consumed alcohol and driven a vehicle?", "Have you ever consumed alcohol and become violent or aggressive?", "Have you ever consumed alcohol and skipped class?" and finally, "Have you ever consumed alcohol and ended up in the hospital?" Each of the items in the index is coded (1 = no, 2 = yes).

Parental and School Attachment. The attachments types measured for this study are parental, school, peer, and drinking/smoking. Both parental and school attachment reflect the feelings that the respondents have towards their parents, their university, and their professors. The items utilized for the "parental attachment" ($\alpha = .85$) index are: "Most of the time, your parents are warm and loving to you?" , "You are satisfied

with the way your parents and you communicate with each other?" and "Overall, you are satisfied with your relationship with your parents?" These items are coded: "1" = "strongly disagree", "2" = "disagree", "3" = "neither agree not disagree", "4" = "agree", "5" = "strongly agree". "How much do you think your parents care about you?" and "How close do you feel to your parents?" are coded: "1" = "not at all", "2" = "very little", "3" = "somewhat", "4" = "quite a bit", "5" = "very much". The "school attachment" (α = .79), index items include: "I feel like I am part of this school?" , "You are happy at this school?" , "I feel close to people at school?" , "Teachers at your school treat students fairly?" and "How much do you feel that your teachers care about you?" These items are also coded: "1" = strongly disagree, "2" = disagree, "3" = neither agree not disagree, "4" = agree, "5" = strongly agree.

Peer Attachment. We include peer attachment, the number of religious friends, and drinking/smoking peer attachment. As previously stated, we include the number of religious friends because it could be influential but is left out of most tests of the perspective. Moreover, there is a body of literature pointing to the fact that peers that drink and smoke have a profound influence on their friends, and we include such a measure here (Huang et al., 2014). Conventional "peer attachment" is a single item that asks, "How much do you feel that your friends care about you?" and it is coded: "1" = "not at all", "2" = "very little", "3" = "somewhat", "4" = "quite a bit", "5" = "very much". Similarly, the number of religious friends that a respondent has is an item that asks how many religious friends the respondent has and it is coded: "0" = "0 friends", "1" = "1 friend", "2" = "2 friends", "3" = "3 friends", "4" = "4 friends", "5" = "5+ friends". "Drinking/Smoking peer attachment" (α = .70) is an index of two items that ask how many of the respondent's three best friends smoke cigarettes or drink alcohol. Both of the items utilized are coded: "0" = "0", "1" = "1", "2" = "2", "3" = "3".

School and Peer Commitment. We include school commitment and while Hirschi did not discuss peer commitment, research indicates that activities engaged in with one's peers can lead to learning delinquent behavior (Thomas & Mccuddy, 2020). In his original work, Hirschi utilized a measure of GPA as a measure of school commitment and we do the same (α = .77). We created the measure by summing the following three items into an index: "What grade did you most recently receive in a Math class?" , "What grade did you most recently receive in a Science class?" and "What grade did you most recently receive in a History class?" The items are each coded: "1" = "Did not take it", "2" = "F [below 60]", "3" = "D [60-69]", "4" = "C [70 – 79]", "5" = "B [80-89]", "6" = "A [90 – 100]". Seven items comprise peer commitment (α = .72) and each refers to how many times the respondent engaged in the activity with friends in the 30 days prior to when the respondent was asked the question. The items are: "Have you gone shopping with one of your friends?" , "Have you played a sport with one of your friends?" , "Have

you talked about life with one of your friends?" , "Have you gone to a movie with one of your friends?" , "Have you discussed a problem with one of your friends?" , "Have you talked about grades with one of your friends?" and "Have you worked on a school project with one of your friends?" Each of the items is coded: "0" = "0", "1" = "1 time", "2" = "2 times", "3" = "3 times", "4" = "4 times", "5" = "5 or more times".

Belief. The questionnaire included one item that asked to what extent respondents agreed or disagreed with conventional rules ("You feel that the rules you have to follow in life are fair"), and it was coded: "1" = "strongly disagree", "2" = "disagree", "3" = "neither agree not disagree", "4" = "agree", "5" = "strongly agree".

Demographic and Behavioral Controls. We also included several control variables. Respondent age was ascertained by asking, "How old are you?" with participants entering a corresponding number. "Gender" was a single item that asked, "What is your gender?" and allowed for a response of "1" = "female" or "2" = "male". Respondents were also asked, "What type of residential area are you originally from?" with the following coding: "1" = "rural", "2" = "suburban", "3" = "urban". Respondents were also asked if they ever had sex or smoked cigarettes. Each item was a dichotomy and coded: "1" = "no" and "2" = "yes".

Results

Table 1 presents descriptive results and since this investigation also includes logistic and linear findings, some explanation is warranted. For Table 2, the "current drinking" item was coded as a dichotomy; therefore, logistic regression was utilized and since the coefficients are odds-ratios, the interpretation is the likelihood that an event will occur in the future. Linear results are presented in Tables 3 and 4. These two equations modeled how frequently respondents were consuming alcohol and whether or not the respondents had ever engaged in problem drinking. These results are standardized coefficients and are interpreted as being correlated to future behavior rather than the likelihood of future behavior occurring.

The descriptive analysis presented in Table 1 indicates that a significant number of the Chinese university students consume alcohol and that the respondents possess the traits of the social bond. Regarding the controls, it should be noted that the sample has more females than males and that the mean age is 20. The respondents are also more likely to be from suburban, rather than from urban or rural locations. Finally, the participants appear to be engaging in sexual activity more often than they are smoking.

In the logistic regression equation (Table 2), which addressed current drinking, the only bond variables that were statistically significant were parental (.919) and drinking/smoking peer attachment (1.148) and school commitment (.947). Among the controls, gender (.474) attained significance. The Nagelkerke R^2 indicated that about 11% of the

Table 1: Descriptive Distribution of Model Measures

Variable	Min.	Max.	Mean	SD	*N*
Dependent variables					
Current drinking	1	2	1.77	.42	701
Drinking frequency	1	6	5.04	.86	701
Problem drinking	0	10	.52	1.33	686
Bond variables					
Parental attachment	5	25	20.75	3.73	701
School attachment	5	25	17.47	3.59	701
Peer attachment	1	5	3.80	.82	701
Drinking/Smoking peer attachment	0	6	1.47	1.48	701
Peer commitment	0	35	15.69	7.10	701
School commitment	3	18	8.68	4.85	701
General belief	1	5	3.26	1.02	701
Control variables					
Gender (2 = Male)	1	2	1.33	.047	701
Age	17	39	20.25	1.91	697
Residential area	1	3	2.10	.91	701
Ever had sex (2 = Yes)	1	2	1.18	.39	701
Smoke cigarettes (1 = Yes)	0	1	.07	.26	701

variance in current alcohol consumption was explained. These results indicate that respondents that were close to their parents and actively attached to university life, were less likely to consume alcohol in the future. On the other hand, students that have close relationships with friends that smoke and/or drink, were associated with a higher likelihood that they will consume alcohol in the future.

Table 3 presents a linear model of drinking frequency with the significant bonds being parental (-.220) and school attachment (-.156), drinking/smoking peer attachment (.183) and peer commitment (.074). Among the controls, smoking (.113) and gender (-.088) attained significance. The Adjusted R^2 indicated that about 18% of the variance in the frequency of drinking was explained. These results indicate that students that had close ties to their parents and universities are associated with lower levels of future frequent drinking. However, students that do drink and have strong ties to other drinkers and smokers, are associated with more frequent drinking in the future. Additionally, respondents that spend time engaging in various activities with their friends are associated with more frequent drinking over time.

Table 2: Multivariate Logistic Model of Problem Drinking

Variable	Exp(B)	SE	*95% CI*		*p*
			LL	*UL*	
Parental attachment	.919	.033	.861	.980	.011*
School attachment	.992	.035	.926	1.062	.817
Peer attachment	1.107	.150	.825	1.485	.500
Drinking/Smoking peer attachment	1.148	.068	1.006	1.311	.041*
# Religious friends	.952	.060	.847	1.071	.414
Peer commitment	1.019	.015	.990	1.049	.205
School commitment	.947	.020	.911	.985	.007**
General belief	1.048	.105	.853	1.288	.654
Gender	.474	.248	.291	.771	.003**
Age	1.060	.052	.956	1.174	.268
Residential area	1.168	.107	.947	1.441	.147
Ever had sex	1.791	.319	.958	3.347	.068
Smoke cigarettes	1.443	.568	.474	4.397	.519

Note: p<.05, p<.01, p<.001. *N* = 701. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Table 3: Multivariate Linear Model of Drinking Frequency

Variable	*Estimate*	*SE*	*95% CI*		*p*
			LL	*UL*	
Parental attachment	-.220	.010	-.069	-.031	.000
School attachment	-.156	.011	- .059	-.016	.001
Peer attachment	.078	.045	-.007	.170	.071
Drinking/Smoking peer attachment	.183	.019	.050	.120	.000
# Religious friends	-.012	.019	-.044	.030	.722
Peer commitment	.074	.005	.000	.018	.053
School commitment	-.060	.006	-.023	.002	.092
General belief	.023	.033	-.045	.084	.552
Gender	-.088	.072	-.300	-.019	.026
Age	.005	.014	-.026	.030	.885
Residential area	.043	.034	-.025	.106	.228
Ever had sex	.035	.083	-.087	.240	.358
Smoke cigarettes	.113	.123	.122	.606	.003

Note: p<.05, p<.01, p<.001. *N* = 695. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Table 4 linearly predicts problem drinking with parental (-.137) and drinking/smoking peer attachment (.083), attaining significance among the bond elements.

Among the controls, smoking (.257) was important. The Adjusted R^2 revealed that the model explained about 14% of the variance in future problem drinking. Once again, two possibilities for the respondents may be evident. First, Chinese university students that are close to their parents are associated with lower levels of future problem drinking. However, Chinese students with close relationships with other peers that drink and smoke, are associated with higher levels of future problem drinking.

Table 4: Multivariate Linear Model of Problem Drinking

Variable	*Estimate*	*SE*	*95% CI*		***p***
			LL	*UL*	
Parental attachment	-.137	.011	-.056	-.013	.001
School attachment	.034	.012	- .015	.030	.460
Peer attachment	-.028	.051	-.113	.067	.523
Drinking/Smoking peer attachment	.083	.022	.001	.087	.043
# Religious friends	.052	.021	-.011	.073	.150
Peer commitment	.008	.005	-.009	.011	.846
School commitment	-.005	.007	-.015	.013	.902
General belief	-.038	.037	-.109	.038	.343
Gender	-.057	.081	-.273	.046	.163
Age	-.004	.016	-.033	.030	.920
Residential area	.057	.038	-.015	.133	.120
Ever had sex	.042	.094	-.081	.289	.270
Smoke cigarettes	.257	.141	.650	1.204	.000

Note: p<.05, p<.01, p<.001. N = 685. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Discussion

The "drinking/smoking peer variable" and parental bonds played important roles in explaining alcohol consumption at these two Chinese universities, across all three outcomes. From a social control perspective, it may be that current drinking, drinking frequency, and problem drinking are all heavily influenced by important relationships. More specifically, the parental tie constrains different types of alcohol consumption among these Chinese students, which makes sense in that the parental attachment construct is rooted in parent-child feelings of love. These findings are also similar to those from prior studies (Karwacki & Bradley, 1996).

Further, the "drinking/smoking peer index" attained significance for all equations and the wording of the two items used is instructive: "How many of your three *best friends* smoke cigarettes or drink alcohol?" The implication is that the respondent is close to other friends that drink and/or smoke. The fact that this result is significant across all three equations indicates that the closer that these respondents were to their

friends that also smoke or drink, the more likely they would do so. However, a learning theorist could argue that these findings are also indicative of the respondents learning the drinking behavior of their close friends and such an assertion also has support in the literature (Vito et al., 2019).

Our results indicate that the gender construct was significant for two of the outcomes. However, given the skewness in our sample, we do not assert a gendered relationship with any of our results and opt to let future scholarship address whether or not a true gender relationship exists. For now, of those male Chinese university students that are currently drinking, they *might be* more strongly bonded to their drinking and smoking peers, than they are to their parents. These results seem to also be in line with prior research (Patterson et al., 2019).

With that in mind, it *may be* that female, Chinese university students, that have close ties to their parents, and that have positive feelings for their university, are more likely to drink less frequently than their male counterparts. Notably, it is the school attachment variable that may be important for drinking frequency for females, whereas school commitment might be important for males, that currently drink. On the other hand, close bonds to friends and spending time with friends generally, seem to indicate higher levels of frequent drinking activity, among these females. It is noteworthy that parental and school attachment bonds for these female students constrain drinking frequency, while peer activities and relationships, seem to enhance it.

The only model that did not display potential gender-based effects was that for problem drinking, so we return to a more generalized interpretation of those results. It appears as though strong parental bonds inhibit drinking severity, while close friendships with friends that drink and smoke may serve as a precursor to it. It may also be that students at these two Chinese institutions are also more likely to engage in this form of drinking if they are also smokers.

Several different conclusions can be extracted from these results. First, efforts to cement parent-child relationships may potentially constrain alcohol consumption for Chinese university students. An additional point is that parental relationships remain significant even as drinking escalates in frequency and severity. This suggests that parental affection remains important, despite the damage that alcohol consumption can cause. Theoretically, the influence of the parental relationship is not unexpected given that Hirschi stated that it is the most important aspect of the social bond. However, one must also acknowledge that robust bonds to friends who smoke and/or drink, were significant for all three equations. Therefore, a learning component for drinking among Chinese university students cannot be discounted.

While again reiterating our gender-based shortcoming, in this sample, results *may indicate* that current drinking is more a male problem, while frequent drinking is more a

female ome. As a result, one might say that these findings suggest that programs aimed at preventing current drinking and frequency may need to be gender based. It should also be noted that gender was not significant for problem drinking, which may indicate that problem drinking happens for the same reasons for both males and females (Lebreton et al., 2017). If true, it may be that initiatives for problem drinking can be more broad-based. Interestingly, respondents that engaged in frequent or problem drinking were also associated with smoking cigarettes. This may reflect the possibility that destructive behaviors occur in tandem with these students.

From a policy perspective, several potential statements can be made about combating these issues on Chinese campuses. One of those is that these findings seems to indicate that detrimental alcohol outcomes may be preventable as positive social relationships develop between Chinese university students, their parents, and the university. Further benefit may also be realized in a climate that is conducive to academic study, school pride, and positive relationships with faculty. As a result, campaigns that stress campus-based counseling, peer education, and family unity, may be advantageous in curbing alcohol consumption at Chinese universities (Htet et al., 2020).

It also appears that Chinese students that drink more frequently and problematically do so in part because it may be that this behavior is partially learned. Specific policy proposals in this area might include cessation campaigns. In the West, such programs are common and utilizing them in Chinese universities would be important if they turned out to be effective because little is known about Chinese students in Mainland Chinese universities. At the same time, institutions could implement programs that encourage friendships between students that emphasize academic and career pursuits (Deil-Amen, 2011).

Notwithstanding these findings, the current study suffers from several weaknesses. First, future attempts at explaining alcohol consumption among Chinese university students should include longitudinal data, which would allow for causal interpretation. Second, the sample was drawn from two Chinese universities, which mitigates the generalizability of our findings. Further, given the directness of the alcohol questions, we cannot discount the existence of social desirability in the responses. Additionally, future research should also examine the possibility of gender-based effects. Finally, we were unable to directly evaluate results among different types of law majors. As a result, further research is needed to clarify these matters.

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