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TRADITIONAL ALCOHOL USE AMONG RURAL YI MINORITY IN CHINA: AN APPLICATION OF THEORY OF PLANNED BEHAVIOR

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TRADITIONAL ALCOHOL USE AMONG RURAL YI MINORITY IN CHINA: AN

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It is estimated that 25% of the alcohol consumed in China as traditional alcohol. This study explored the drinking patterns and the motives to use traditional alcohol among a sample of the Yi minority in southern China. The Theory of Planned Behavior was used to explore motives.

Based on initial fieldwork among the Yi a questionnaire was developed to provide data to describe traditional alcohol use and to assess the constructs of attitude, subjective norms and perceived behavioral control as expressed the Theory of Planned Behavior. The questionnaire was refined and the results served as an adequate measurement to explore drinking motives using the constructs of the Theory of Planned Behavior.

Like most Chinese considerably more males than females drank alcohol although the gender difference in the use of traditional alcohol was much smaller. Older people were more likely to drink traditional alcohol than younger people. Traditional alcohol drinkers preferred high ABV alcohol. Among the three constructs of the Theory of Planned Behavior only perceived behavioral control significantly predicted intentions to use traditional alcohol. Suggested explanations for these results are discussed.

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CHAPTER 1 INTRODUCTION

Introduction to the Study

This paper describes a study of the patterns of traditional alcohol use and of the motives for drinking traditional types of alcohol among a sample of rural Yi minority people from Panzhihua City, Sichuan Province, China.

Alcohol Use in China

Alcohol has been used by practically all cultures in the world and is one of the basic beverages used by mankind – water, milk, fruit juice, and fermented juices. Alcohol facilitates social gatherings and cultural practices ranging from religious rituals to medical treatments. Archeological evidence suggests that alcohol has been produced and consumed in China for at least 17,000 years (Winchester, 2008). During this long period, different types of alcoholic beverage were invented, or were introduced from other counties. Grain-based beer was the first alcohol consumed by the Chinese, followed by grape wines and possibly wines from other fruits. Later, distilled spirits were developed. Distillation first occurred by freezing and then later as a result of heating (McGovern, 2003).

In today's China, as a result of imports from the West and the expanding economy, there is a wider range of beverage alcohol available and more alcohol consumed by a wider cross-section of the society than was likely at any other time in China's history (Zhang, Casswell, and Cai, 2007).

Types of Alcohol in China

There are several ways to categorize beverage alcohols. The first is according to the source of the sugar for fermentation. Alcohol can be produced from fruit or grain: fruit-based alcohol and grain-based alcohol. A second way is to separate alcohols produced by distillation from those produced by fermentation. Alcohols produced by distillation are often referred to as spirits or spirit alcohols. Distillation increases the alcohol content (alcohol by volume or ABV) of the beverage. Sometimes distilled products are mixed back into fermented products to increase the alcohol content of the fermented beverage.

Alcohol can also be classified by the location of production and whether or not the alcohol is produced and distributed within a legal distribution system. Hence, researchers have developed terms like homemade alcohol, noncommercial alcohol, informal alcohol, and unrecorded alcohol. All these terms refer to alcohol produced, distributed and sold outside of the formal marketing system. These terms are often misleading and poorly defined. Homemade alcohol is just that, made at home for family consumption. But sometimes the homemade alcohol is also sold or traded nearby, so it becomes commercial, but it could still be considered informal alcohol. Similarly alcohol that is made in larger facilities than found in the home, but not subject to oversight from a government body and not distributed as a commercial product through a regulated market stream is sometimes referred to as noncommercial alcohol; however, this alcohol is produced in larger quantities explicitly to be sold, so it is commercial, and its production could not be considered informal. The term "unrecorded alcohol" is also misleading. Certainly there are no official records of production, but the makers and distributors have

records of various types. Newman and Qian (2012) have proposed that alcohol made in the home or in small production facilities principally for sharing or sale or exchange or distribution to a limited geographically area, involving individuals who are typically known to each other be called "traditional alcohol," because production and distribution follows patterns that have been in existence for centuries. Traditional alcohols are typically not illegal, either because laws accommodate their production or there are no laws prohibiting their production. Traditional alcohols can be either fruit-based or grain-based.

This study focused on the use of traditional grain-based, distilled alcohol made and used by the Yi people in and around Panzhihua City.

The Consumption of Alcohol in China

Throughout Chinese history, alcoholic beverages made from grains have been dominant in the Chinese brewing industry. Grain-based distilled alcoholic beverages, white liquor or "spirits", are the dominant types of alcohols in the Chinese market place today. In 2014 the World Health Organization (WHO, 2014) reported that in 2011 69% of adults in China drank spirits, 28% drank beer, and 3% drank wine. From 2003 –2005 to 2008 – 2010 consumption of all alcohols increased from 3.2 liters to 5.0 liters of pure alcohol per year, per person aged 15 years and older. During the same period unrecorded alcohol consumption remained steady at 1.7 liters of pure alcohol per person 15 years and older. Among those who reported drinking the males consumed 18.7 liters of pure alcohol and females 7.6 liters for a national alcohol consumption rate of 15.1 liters of pure alcohol consumed per years by drinkers age 15 and older.

      Traditional alcohol is often considered "harmful" by researchers tracking its use in Europe, South America and Africa (Rehm, Kanteres and Lachenmeier, 2010). Some researchers have called for its total elimination (Tang et al., 2013). However, traditional alcohol plays an important role in many parts of Chinese society. The proportion of the population drinking traditional alcohol suggests its overall importance.

CHAPTER 2 LITERATURE REVIEW

This chapter reviews what little has been reported about the Yi people and their alcohol use. It also reviews the available literature related to the development of theories of motivation and the theory of planned behavior (TPB), which served as the model for exploring motives for using traditional alcohol in this study.

Yi people are the fourth largest minority group in China. The 2010 China Census (National Bureau of Statistics of China, 2000) estimated that the population of Yi was 7.762 million, and over 95% lived in mountainous rural areas in the provinces of Yunnan, Guizhou, Sichuan and the Guangxi Zhuang Autonomous Region. The Yi minority has its own spoken and written language with six dialects (Zhou, 2014). The Yi people, as a recognized minority group, includes many branches and they call themselves variously "Nuosu", "Nasu", and "Niesu". In most Yi areas, buckwheat, corn, and potatoes are the main food sources and also are the main ingredients for making alcohol. In these areas the climate is sometimes cold, and alcohol drinking is considered an effective way to keep warm. Alcohol also plays an important role in the social and hospitality customs of the people. Typically the Yi will treat guests with different kinds of alcohol to celebrate special occasions. At special occasions, such as festivals, weddings, birthday parties, or moving into a new house, the Yi will celebrate by drinking alcohol along with singing and dancing. When friends get together to drink, it is common to sing songs that encourage others to drink or drink more.

Other drinking practices illustrate the social nature of alcohol use. For example there is a drinking practice called *zhuanzhuanjiu* (drinking alcohol in turns) in which lower ABV alcohol is poured into a big bowl and local residents sit in a circle around the

bowl. The oldest resident will take the first sip, wipe the bowl edge and then pass the bowl to the next person. People drink the alcohol in turn until it is finished (Zhou, 2014). Another variation on this group drinking practice is called *ganganjiu*. People pour alcohol into a large jar (10-15 kilograms) and sit or stand around it. Each jar has straws made from wheat or other material, from a few to many. Each person is assigned one straw. This enables people to drink at the same time or whenever they want to drink.

The phrase, translated into English, 'eating meat in large joints, drinking alcohol by big bowls' is used by the Yi to characterize the role of alcohol in their society. Generally, minority groups are identified as drinking more amounts of alcohol, drinking more frequently, and having lower income than the majority Han people (Guo et al., 2008). This generalization seems to apply to the Yi according to the only published study we could locate (Li, Wang, and Heng, 2001). According to Li and his colleagues, 36.0% of the sample of Yi reported being drinkers compared to 33.5% of those who identified themselves as drinkers among the Han. Of the 36% reporting drinking-related psychological disorders 36% were Yi compared to 12.2% Han. Similarly 14.7% of the Yi reported alcohol-related physical disorders compared to 9.5% of the Han. Among the Yi 12.3% reported social disorders compared to 6.8% among the Han.

Drinking Motives

The two basic objectives of this paper were, first to describe the patterns of traditional alcohol drinking by the Yi people in Panzhihua and second, to describe the motives that were the basis for the drinking patterns. Motives and motivation are the theoretical constructs used to define the reason a person acts or behaves a particular way (Ellliot and Covington, 2001). A motive may not always result in a specific behavior but

as Pardee (1990) notes it prompts a person to act in a certain way or at least to have a preference to for specific behavior.

Theories of motivation are well-studied in Western countries and can be categorized a number of ways. Incentive theories, cognitive theories, and content theories are used widely to explain various behaviors. Incentive theories include intrinsic motivation, extrinsic motivation, and operant conditioning. Intrinsic motivation involves the personal desire to seek out new experiences and new challenges, and to enjoy the personal satisfaction of assessing one's capacity, and enjoying the satisfaction of gaining new knowledge and experiences (Ryan and Deci, 2000). Extrinsic motivation refers to the performance of an activity to gain rewards that are outside the individual and not personal, such as social acclaim or a tangible outcome like wealth. Extrinsic motivation is sometimes thought of as the opposite of intrinsic motivation.

Operant conditioning is the term proposed by Skinner (1938) to describe the effects of the consequences of a particular behavior on the occurrence of that behavior. Four operant conditioning effects have been proposed: positive reinforcement, negative reinforcement, punishment, and extinction. Both positive and negative reinforcement strengthen the likelihood of a behavior, while both punishment and extinction reduce the likelihood of the behavior.

Cognitive theories include goal-setting theory and expectancy theory. Goal setting is straightforward, that is, how to set goal(s) to achieve a certain behavior. Expectancy theory suggests that how a person behaves is due to what they expect will be the result of the behavior (Bandura, 1982).

Content theories include Maslow's hierarchy of needs (1943), Herzberg's two-factor theory (Herzberg, 1964), and self-determination theory (Ryan and Deci, 2000). Maslow proposed a hierarchy of needs that serve to motivate behavior at several levels. According to Maslow behaviors are motivated by a necessity to meet these needs. The hierarchy included four needs related to basic survival and one related to growth: physiological, safety, love/social, and esteem are the four basic survival needs, and growth needs are represented by self-actualization. Maslow's physiological and safety needs roughly equate to existence needs and his love/social and self-esteem needs to relatedness. Herzberg's two-factor theory includes motivators related to personal satisfaction and hygiene factors that do not motivate directly but will result in demotivation if absent. For example, the personal satisfaction from participation in an activity is itself directly motivating. External factors such as the environment in which the activity occurs may themselves alone not motivate, but their absence directly moderates positive motives. Self-determination theory, developed by Deci and Ryan (2000), suggested three variables important in motivation: satisfaction, relatedness, and autonomy. Lacking any of the three elements, will be demotivating.

Practitioners in applied fields like public health have drawn directly from these and other general theories of motivation to develop models or additional theories that are directly relevant to increasing specific knowledge and changing behavior. Ajzen and Fishbein (1975;1980), for example developed a theory of reasoned action that is based on the belief that all actions are reasoned and that understanding the expected outcome of the behavior and the degree of social support for the desired behavior represented the key elements in the reasoning for completing a particular behavior. Later they added a third

element (perceived behavioral control) related to perceived personal control over obstacles to the behavior change and renamed the theory – the theory of planned behavior (Ajzen, 1991). It is this theory of planned behavior that is used in this study to understand the motives for the use of traditional alcohol by the Yi people.

Theory of Planned Behavior

The Development and Concepts of TPB

The theory of planned behavior (Ajzen, 1991; Ajzen et al., 2011) extends the theory of reasoned action (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975). Both the theory of reasoned action and TPB suggest intention as the core predictor of a behavior. The TPB adds the construct of perceived behavioral control as a third predictor of intention. The TPB suggests the three determinants of intention are independent from each other. The three determinants are attitude toward the behavior (ATT), the social factor of subjective norm (SN), and the degree of perceived behavioral control (PBC) (Ajzen, 1991). Generally, an individual will have a stronger intention to perform the behavior if they have a more favorable attitude toward a behavior, the stronger motivation to comply with subjective norms, and the greater perceived behavioral control over the obstacles to the behavior (Ajzen, 1991). Attitude toward the behavior, subjective norm, and perceived behavioral control are predictors of intention, and both intention and perceived behavioral control predict the occurrence of a behavior. Figure 1 illustrates the theoretical model of the theory of planned behavior.
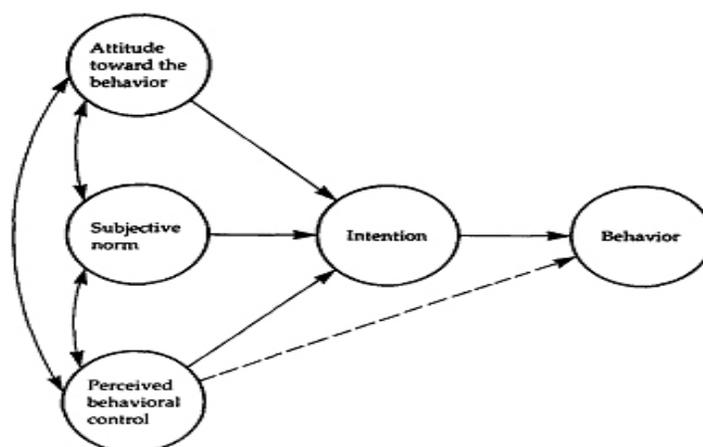
Figure1. The Model of Theory of Planned Behavior (Ajzen, 1991)

Intention is the central predictor of the behavior. Intention indicates the amount of effort an individual will apply to changing a behavior or the strength of a person's willingness to perform the behavior (Ajzen, 1991).

Attitude toward the behavior is a function of the belief about the outcome of the behavior and the subjective evaluation of the outcome. This is a value expectancy model. For example, an attitude toward stopping drinking will depend on the belief about the outcome of stopping drinking and the perceived value of that outcome. Stopping drinking would save money (good/bad) and saving money would be good/bad. Generally, the formation of beliefs is not independent, rather it is associated with other related attributes so an attitude scale of several outcomes would constitute the attitude scale.

Subjective norm refers to the social pressure or motivation from others to perform or not to perform the behavior. It is affected by the strength of normative belief and the strength of the motivation to comply with the normative belief. Normative beliefs indicate the opinions of a significant referent or social group holds for the behavior. The

motive to comply is the strength of the desire to comply with the referent or social group.

My mother thinks I should stop drinking. I do not value what my mother thinks.

Perceived behavioral control refers to beliefs an individual has about the obstacles

to changing the behavior and their perceived confidence in overcoming these obstacles.

Ajzen (1991) described perceived behavioral control as similar to Bandura's (1982)

concept of self-efficacy, which "is concerned with judgments of how well one can

execute courses of action required to deal with prospective situations" (Bandura, 1982).

In some studies, a distinction is made between self-efficacy and behavioral control.

Behavioral control refers to the perception an individual has in terms of the actual control

one has to perform the behavior and not the behavior needed to overcome obstacles to the

behavior (Armitage and Conner, 2001). However, in some studies self-efficacy and

perceived behavioral control are still treated as one predictor (Norman and Conner, 2006).

Perceived behavioral control contains control beliefs and perceived power beliefs.

Control beliefs are partly from prior experiences with the behavior, and are influenced by

information about the difficulty to perform the behavior. The stronger the perceived

power and control belief, the greater the perceived behavioral control.

The Principles for Developing TPB Questionnaire

Two principles are addressed by Ajzen (1991) for developing a TPB measurement

instrument. The first one is the principle of compatibility. The second is the principle of

elicitation. Attitude, subjective norm, perceived behavioral control, and intention have to

be estimated by adopting standardized scales (Ajzen, 2006). The measures must be

directly compatible with the behavior in terms of action, target, and time elements. Ajzen

(1991) mentions two conditions that have to be met to get accurate predictions. The first

is that the measure of intention and perceived behavioral control must compatible to the predicted behavior. The second is that intention and perceived behavioral control must remain stable.

The Application of TPB to Alcohol Drinking

Armitage and Conner (2001) conducted a meta-analysis of the efficacy of the theory of planned behavior, reviewing 185 independent studies. They found that TPB accounted for 27% variance in behavior and 39% variance in intention. Subjective norm was found to be a weak predictor of intentions. Although the theory of planned behavior predicted the studied behavior in many domains, many researches have suggested ways to improve the model. Ajzen and his colleagues (2011) considered adding an extra dimension of knowledge. However, they pointed out that knowledge about alcohol does not have a significant impact in predicting drinking behavior. The TPB has been used in numerous studies of alcohol use in different social setting and with different groups of people in western countries (Huchting, Lac, and Labrie 2008).

Studies in Western Settings

Huchting, Lac, and LaBrie (2008) applied the theory of planned behavior to examine drinking patterns among sorority woman. They found that subjective norms had a stronger predictive effect than attitude on alcohol drinking, and perceived behavioral control did not have a significant predictive effect on intention but was a significant predictor for drinking behaviors.

Glassman, Braun, Dodd, Miller, and Miller (2010) examined college student's drinking motivation on game days. They found that both attitudes and subjective norms were significant in predicting drinking intention, but perceived behavioral control was

inconsistent in its prediction of drinking intention and drinking behaviors. They also found that the theory of planned behavior was less effective in predicting participants' drinking behavior when their alcohol consumption increased. Collins, Witkiewitz, and Larimer (2011) assessed the growth of risky college drinking over a three-month period. They found that all the three determinants, attitudes, subjective norms, and perceived behavioral control, were significant in predicting college student's risky drinking, and intention was significant in predicting further heavy episodic drinking. However, for the heavy episodic drinking only perceived behavioral control and attitude were significant in predicting intention.

In summary, the constructs of subjective norms and perceived behavioral control were not consistent in predicting the intention for alcohol drinking across different social setting and group of peoples. However, the overall model still explained a fair amount of variance in drinking intention.

The Application of TPB in China

Duan and Jiang published a review of the theory of TPB (Duan and Jiang, 2008). Following this the TPB has been used in various fields, such as medicine use, environmental protection, and condom use. However, there is no study applying the theory of planned behavior to explain drinking motives in China.

The Purpose of This Study

This study has two purposes and adds to the existing knowledge base on alcohol use in China.

First, drinking among Yi minority has not been systematically studied. A better understanding of Yi minority drinking patterns will provide a better basis for scholars and policy makers to plan future studies and consider policy options to reduce alcohol-related risks. Second, only a few studies, such as Newman and Qian (2012) and Li and his colleagues (2001) have systematically examined traditional alcohol drinking patterns among rural people in China, but no empirical study explains the drinking motivation of traditional alcohol use among a sample of rural people. The theory of planned behavior had been applied in different social setting with different groups of people, and the previous research has provided evidence to suggest that TPB is a plausible model to explain drinking motives. Therefore, the second purpose of the current study is to test if the TPB is a plausible model to explain rural Yi minority drinking intention in China.

Research Question and Hypothesis

The research question of this study is: What is the drinking pattern among rural Yi minority? The research hypothesis is: the Constructs of attitude, subjective norm, and perceived behavioral control, as conceptualized in the theory of planned behavior, will predict the intention to use traditional alcohol among a sample of Yi people in southern China.

CHAPTER 3 METHODOLOGY

The Development of the Questionnaire

There was no existing questionnaire that could be used for this study. The questionnaire used was developed specifically to address the study's research objectives: to describe the patterns of traditional alcohol drinking by the Yi people in Panzhihua City (PC) and second, to describe the motives that were the basis for the drinking patterns. The research hypothesis was that the constructs of the Theory of Planned Behavior-- attitude toward the behavior, subjective norms, and perceived behavioral control--will predict alcohol drinking intentions among rural Yi minority.

The questions to measure the patterns of alcohol use were based on the work of Newman and Qian (2012) in their study of traditional alcohol production and sale: "Summary of a three-year study of noncommercial alcohol production, sale, and consumption in three provinces in China". The development of the questions to assess the three constructs of motivation identified in the Theory of Planned Behavior followed the questionnaire development advice outlined by Ajzen (1991; 2006)

In total the questionnaire included three parts: demographic questions, measures of drinking behavior, and measures of the three constructs of the Theory of Planned Behavior. (See Appendix B.).

Demographics

The demographic questions asked about the participants' ethnicity, age, gender, occupation, and education.

Drinking Behavior

Descriptions of drinking behavior were based on seven questions presented here as

English translations of the Mandarin. *Did you drink in the past year? How often did you*

drink? Did you drink traditional alcohol in the past year?   How often did you drink

traditional alcohol? What was the proportion of the total amount of alcohol you drank

that was traditional alcohol?   The traditional alcohol you drank: was it high ABV or low

*ABV? W*hat type of alcohol did you drink the last time you drank?

Alcohol quantity was not measured. Drinking amount is hard to measure

accurately in China, for a number of reasons (Newman, Qian and Xue, 2004; Newman,

2008; Newman, Qian, Zhang, Zhao, and Zhang, 2009). There is no accepted measure of a

standard drink. Alcohol is available in wide range of strengths (ABVs). Alcohol is sold in

a wide range of different sized containers. Drinkers consume alcohol from a wide range

of containers and these containers are often "topped up" by people other than the drinker.

Often, in the course of a drinking occasion, different types of alcohol will be consumed.

A drinking occasion may last several hours during which alcohol is consumed at different

rates, further challenging the reporting of drinking quantity and the calculation of pure

alcohol consumed.

The Constructs of the TPB used in Previous Alcohol Studies

The few alcohol studies that have used the constructs of the TPB to understand alcohol

use have used a variety of different measures. For example, Norman (2008) in their study

of binge drinking developed their own measures to represent the constructs in TPB.

Huchting, Lac, and LaBrie (2008) used 20-item Drinking Motives Questionnaire (DMQ;

Cooper, 1994) to measure drinking attitudes and items from Rutgers Alcohol Problem

Index (RAPI, White and Labouvie, 1989) to measure perceived behavior control, and developed their own measures for subjective norms and intention. This lack of standardized measures for the constructs of TPB to explain alcohol use limited the comparability of the results of earlier studies.

Developing the Measures of the Constructs of the TPB

Ajzen (1991; 2006) has outlined methods for developing questions to assess the constructs of the TPB. The first step suggested is to elicit information (salient beliefs) from the group of interest, in this case, the Yi people. Eliciting salient beliefs refers to the antecedents of attitude related to the behavior, subjective norms related to the behavior, and perceived behavioral control. To elicit these salient beliefs involves asking three questions of a representative sample of the group of interest. The first question is: what are the advantages and disadvantages of the behavior in question? The second is: which groups or individuals impact the occurrence of the behavior in question. The third question is: which factors impede or promote the occurrence of the behavior in question? (Ajzen, 2006). From the analysis to the answers to these questions it is possible to develop a list that can serve as the basis for developing the scales to measure each construct.

This process was not followed in its entirety, but the spirit of Ajzen's 2006 s suggestion guided the first steps of this instrument's development. The investigator of this study was herself a member of the Yi people and she conducted a limited series of elicitation interviews with other Yi in Panzhihua City, China. Also contributing to this questionnaire development were discussions among a group of alcohol researchers who have worked extensively on issues related to alcohol use in China and in particular

traditional alcohol use. When the first draft of the questionnaire was completed it was translated into mandarin and evaluated for comprehension by two rural Yi people. Final changes were made based on the local people's understanding of the meaning of the questions.

<div align="center">**Measurement of the Construct of the TPB**</div>

Attitude toward the Behavior

Nine items were used to represent the construct of attitude toward the behavior. Five items asked about beliefs and four about the evaluation of the beliefs. All behavioral belief items were responded to on a five-point Likert scale scored from "extremely unlikely" to "very likely"*: Drinking traditional alcohol helps me to improve my physical strength; Drinking traditional alcohol helps me to increase my blood circulation; Drinking traditional alcohol makes me feel warm; Drinking traditional alcohol makes me feel happy; and Drinking traditional alcohol helps me to reduce fatigue*. The evaluation items also used a five-point Likert scale from "extremely bad" to "extremely good"*: For me, to improve my physical strength by drinking traditional alcohol is; For me, to increase my blood circulation by drinking traditional alcohol is; For me, to make me feel happy by drinking traditional alcohol is; For me, to reduce fatigue by drinking traditional alcohol is*. The behavioral belief item related to warmth did not have a corresponding evaluation question.

According to Ajzen (1991), attitude is represented by the sum of the scores on the behavioral belief scale multiplied by the evaluation of each behavioral beliefs. However, both behavioral belief and evaluation are measured on a Likert scale and the responses are interval level data, and interval level data cannot be multiplied. Instead confirmatory

factor analysis was used to assess how well the items represented the constructs. Higher scores for behavioral belief and evaluation represented more favorable attitudes toward traditional alcohol drinking.

Subjective Norm

Ten items were used to represent subjective norm. The subjective norm measure identifies important social referents and the strength of the desire to comply with their wishes regarding the behavior in question. Important referents included *my wife/husband, my parents, sisters/brothers, my close friends, my peers/village residents, and my parents in law.* Each item was phrased as *"(referent) thinks I should drink traditional alcohol"*, responded to on a 5-point Likert scale ranging from "strongly agree" to "strongly disagree."

Items used to represent motivation to comply were ranked from "not at all" to "very much" in response to: *Generally, how much do you care about your (referent's) opinion on traditional alcohol drinking.*

Higher scores for subjective norms represent less agreement with drinking traditional alcohol.

Perceived Behavioral Control

Twelve items in two areas were used to measure perceived behavioral control. Behavioral control items identify difficulties that would need to be overcome to change intentions. The two areas were control beliefs with six items and perceived power with six items. Items were paired. The six items for control beliefs were: *how often do you feel sick, tired, sleepy from drinking traditional alcohol; how often do you feel that you cannot afford to drink traditional alcohol; I don't like the taste of traditional alcohol.*

These items were responded to on a Likert scale from "extremely true" to "extremely false." The last item, *how often do you have difficulty to find a place to buy or to make traditional alcohol?* Was responded to on the scale "very rarely" to "very frequently;" higher scores indicated the importance of the control issue.

The six items were used to represent perceived power to overcome the difficulties identified in the control beliefs were*: I would not drink traditional alcohol if it makes me feel sleepy, sick, tired; I would not drink traditional alcohol if I do not like its taste; I would not drink traditional alcohol if I cannot afford it. I would not drink traditional alcohol if I cannot find it or buy it.* These items were responded to on a scale "strongly disagree" to "strongly agree." The higher score indicated higher self-efficacy.

Intention

Five items scored from extremely unlikely to very likely were used to measure intention. The items were*: I intend to drink traditional alcohol every day; I intend to drink traditional alcohol at least once next week; I intend to drink traditional alcohol at least once next month; I intend to drink traditional alcohol at least once next year; and I intend to drink traditional alcohol in the future.* Responses were reported as an ordinal scale from 0, not drink, to 5, will drink every day. This study used the highest score as the criteria to recode the five items. The score was recoded as 5 if the participant chose "very likely" to intent to drink every day. The score was recoded as 4 if the participant chose "very likely" to drink at least once next week but not "very likely" to drink every day. The score was recoded as 3 if the participant chose "very likely" to drink at least once next month but not "very likely" for intent to drink every day or drank at least once next week. The score was recoded as 2 if the participant chose "very likely" to drink at least

once next year but not "very likely" for any more recent futures. The score was recoded as 1 if the participant chose "very likely" or "likely" to drink at least once in the future but not any other "very likely" items. The score was recoded as 0 if the participant chose "extremely unlikely" or "unlikely" or "don't know" for the item of intent to drink at least once in the future. The Higher score represents higher intention to drink traditional alcohol.

Confirmatory Factor Analysis

This study sought to determine the role of the three constructs of the TPB in predicting intentions to drink traditional alcohol. Confirmatory factor analysis (CFA) using Mplus V. 7 was conducted to examine the fit of the measures to the TPB constructs. In current study, relative Chi-square, Comparative fit index (CFI), Root Mean Square Error of Approximation (RMSEA), and standardized root mean square residual (SRMR) were used to determine the fitness of the data to the theoretical model for the confirmatory factor analysis. The relative chi-square is the value of the chi-square index divided by the degrees of freedom. This index might be less sensitive to sample size than chi-square. The criterion for acceptance varies across researchers, ranging from less than 2 (Ullman, 2001) to less than 5 (Schumacker and Lomax, 2004). CFI represents the ratio between the discrepancy of the target model and the discrepancy of the independent model (there is no relationship among targeted constructs). Values that approach .95 indicate acceptable fit (Hu and Bentler, 1999). The RMSEA is currently the most popular measure of model fit and it now reported in virtually all papers that use CFA or SEM. Hu and Bentler (1999) suggested values below .06 indicate a good fit. The RMSEA values are classified into four categories: good fit (.00–.05), fair fit (.05–.08), mediocre fit (.08–

.10), and poor fit (over .10). RMSEA values smaller than 0.05 indicate a good fit. The

SRMR is an absolute measure of fit and is defined as the standardized difference between

the observed correlation and the predicted correlation. A value of zero indicates a perfect

fit. A value less than .08 is generally considered a good fit (Hu and Bentler, 1999).

The CFA results indicated that the subjective norms represented by normative beliefs

and motivation to comply did not converge due to the negative covariance matrix

between motivation to comply and normative beliefs. Therefore, subjective norm

measure was removed. Theoretically, the construct of intention should be included in the

confirmatory factor analysis model. However, it was not been included as it only

contained one item. The model is shown in figure 2. After taking out the second order

construct for subjective norms and allowing four correlations among indicators under the

same first order construct, the results indicate that the measurement is an adequate

measure of the TPB constructs (x^2(df=363, n=347) =1160.0, p <.0001; $\frac{x2}{df}$ = 3.19;

CFI=.90; RMSEA=.08; SRMR=.07).

Correlation within a construct is allowed (Fornell, 1983; Gerbing and Anderson, 1984)

if it does not significantly alter the structural parameter estimates. The item of "*my close*

friends think that I should drink traditional alcohol" positively correlates with the item of

"*my peers/village residents think that I should drink traditional alcohol*" with the

magnitude of .63 within the construct of motivation to comply. The item of "*how much*

do you care about your close friends' opinion on traditional alcohol drinking" also

positively correlates with the item of "*how much do you care about your peer/village*

residents' opinion on traditional alcohol drinking" with the magnitude of .57. In rural

villages, Yi people's close friends are more likely living in the village due to the

inconvenient transportation and lack of modern communication tools. The item "*I do not want to drink traditional alcohol because I cannot afford it*" positively correlates with the item of "*I do not want to drink traditional alcohol because I cannot find it or buy it*" with the magnitude of .62 under the construct of perceived power. These two items measuring the effects of accessibility to traditional alcohol within the construct of perceived power. Hence, the correlation is reasonable. The correlation between the item of "*my wife/husband think that I should drink traditional alcohol*" and "*my parents or sisters/brothers think that I should drink traditional alcohol*" was .31 under the construct of normative beliefs/beliefs. Rural Yi people have a stronger family ties than the majority of Han people, and thus are more likely to value family member's opinion. Both spouse and parents or siblings was often the family members often live together in a rural Yi family. The model is seen in Figure 2.
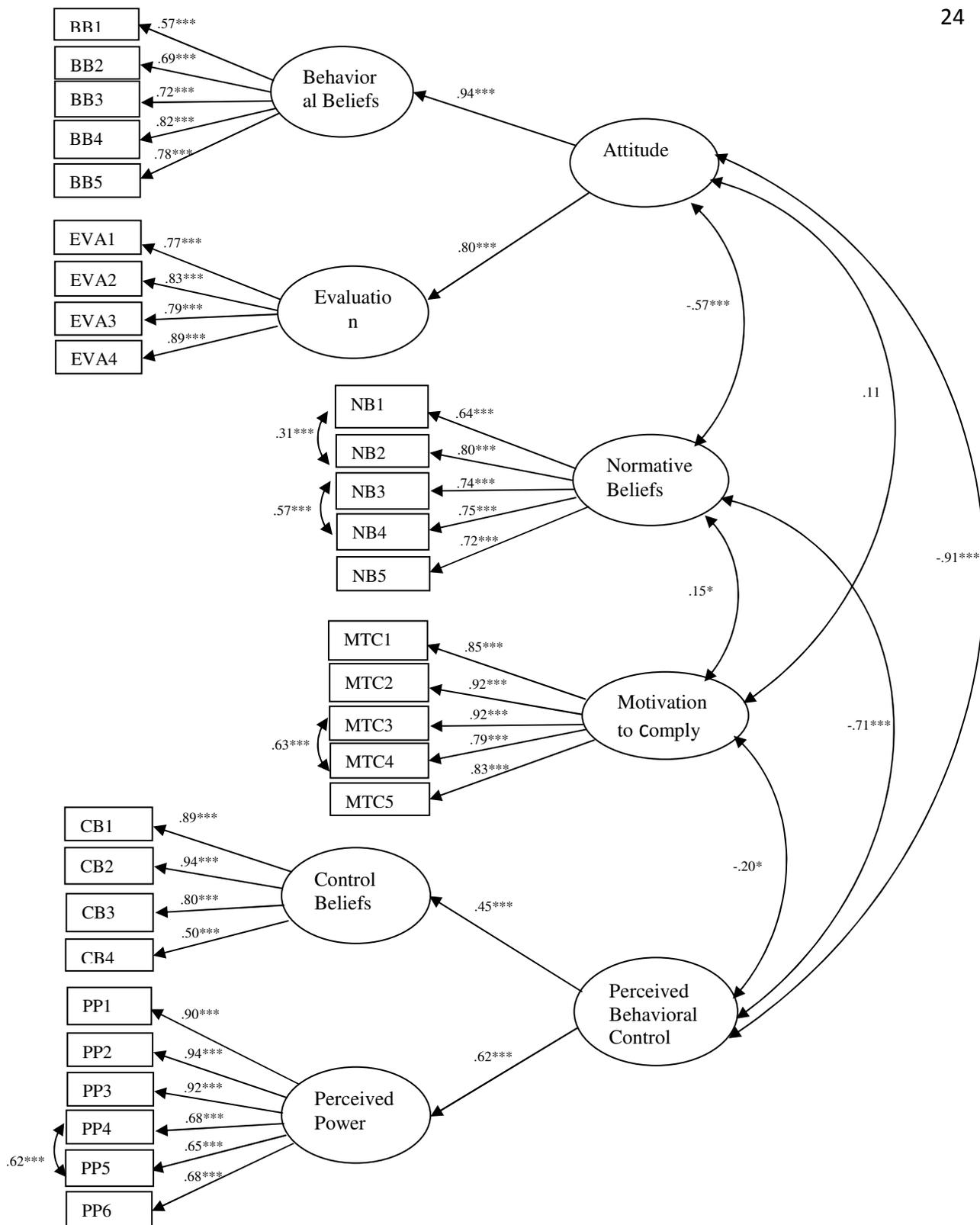
Figure 2. Confirmatory factor analysis of the TPB. *** indicates p<.001; ** indicates p<.01, * indicates P<.05.

The Reliability of the Measurement

Attitude

Nine items were included in the construct of attitude toward behavior. Five items were used to represent behavioral beliefs, and the other four items were used to represent evaluation of behavior. Chronbach's alpha for the behavioral belief and evaluation was .84 and .89, respectively.

Subjective Norms

Ten items were included in the construct of subjective norms. Five items were used to represent normative norms, and the other five items represented the motivation to comply. The items of motivation to comply were reversed for the data analysis. Chronbach's alpha for normative beliefs and motivation to comply was .87 and .93, respectively.

Perceived Behavioral Control

Six items represent control beliefs. The score for the items *how often do you feel that you cannot afford to drink traditional alcohol* and *How often do you have difficulty to find a place to buy or to make traditional alcohol*, which were rated from "very rarely" to "very frequently", were reversed to match the control beliefs of other items. Cronbach's alpha for the six items was .78. After deleting the item of *how often do you have difficulty to find a place to buy or to make traditional alcohol* the Cronbach's alpha increased to .81, and after deleting the item of *I don't like the taste of traditional alcohol*, the Cronbach's alpha of control belief increased to .86.

Six items represented the perceived power, and had a Cronbach's alpha of .92.

Data Collection Procedures

Participants in this study were 414 rural Yi minority individuals living in the rural areas of Panzhihua City. Panzhihua City has three districts and two counties: Dong district, Xi district, and Renhe district, and Miyi county, and Yanbian county. Participants were from Renhe district and Yanbian County and interviews were conducted from June 6th 2014 to June 29th 2014.

A convenience sampling method was used. Interviewers approached a purposely diverse group of individuals in public places in the villages. A paper-based face-to-face interview was used because of the low level of literacy among this sample. Interviewers recorded the individual's answers on the questionnaire form. Ninety-five interviews were completed in the two villages in Yanbian County, Haozhiping village and Qingmingdi village. The remaining 319 interviews were completed in Renhe district, in six villages, Pingdi, Yishala, Ala, Dalongtan, Xiaohuoshan, and Yuming.

The researcher trained the three local Yi teachers on sample selection, interview procedures and conditions of confidentiality. The project was approved by the Institutional Review Board (IRB) at the University of Nebraska (Appendix A) and by the community leaders in the participating communities. Participation was voluntary and interviews were conducted in convenient and comfortable sites. The questionnaire took approximately 5 minutes to complete.

Statistical Methods

SAS version 9.3 was used derive the descriptive statistics and to estimate the reliability of the questionnaire. Mplus version 7 was used for the structural equation modeling. Second-order factor model was used and tested by confirmatory factor analysis (CFA). Attitude, subjective norm, and perceived power were the higher order constructs. Behavioral beliefs, evaluation, normative beliefs, motivation to comply, perceived power, and control beliefs were the first order constructs. Structural equation modeling was used to test the proposed path model: that is, attitude toward drinking behavior, subjective norms, and perceived behavioral control were significant predictors of intention to drink traditional alcohol by members of the Yi minority.

CHAPTER 4 RESULTS

Demographics of the Sample

Four hundred and fourteen Yi completed the survey (Appendix B). The results from 25 questionnaires were deleted from the sample because the inconsistency in the answers about drinking behavior. Another 42 questionnaires contained missing values in the demographic and TPB measure sections and were deleted from the sample. In the questions related to the subjective norm construct there were 48 questionnaires with missing data that were retained for reasons of logic. For example, some older participants could not answer the question about parents or parents-in-law, as they were likely deceased. These missing data were randomly distributed in the database. To retain the rest of the data from these subjects it was appropriate to replace any missing values with the means for these variables.

In total the results from 67 questionnaires (16%) were deleted from the sample leaving a valid sample of 347 participants, 84% of all interviews completed. In this chapter, the first part describes the demographic characteristics of the sample, the second part describes the drinking patterns among the sample and the third part describes the motives related to the drinking patterns.

The sample was predominantly male (60.2%) with an average age of 44.2 ± 15.5. The majority of participants' were farmers (71.2%) and the majority (88.8%) had educations at middle school will level or below.

Table 1

Demographic Information of Participants

		Male		Female		Total	
		N	%	N	%	N	%
Age	18 – 27	31	14.8	25	18.1	56	16.1
	28 – 37	37	17.7	29	21.0	66	19.0
	38 – 47	48	23.0	33	23.9	81	23.3
	48 – 57	52	24.9	26	18.8	78	22.5
	58 and above	41	19.6	25	18.1	66	19.1
	Total	209	100.0	138	100.0	347	100.0
Occupation	Farmer	140	67.0	107	77.5	247	71.2
	Driver	16	7.7	3	2.2	19	5.5
	Construction worker	4	1.9	0	0.0	4	1.2
	Service business	5	2.4	6	4.4	11	3.2
	Worker in local factory	9	4.3	0	0.0	9	2.6
	Other	35	16.8	22	16.0	57	16.4
	Total	209	100.0	138	100.0	347	100.0
Education	Illiterate	31	14.8	40	29.0	71	20.5
	Junior high school or below	150	71.2	87	63.0	237	68.3
	Senior high	14	6.7	6	4.4	20	5.8
	Technical Secondary	11	5.3	4	2.9	15	4.3
	Junior College or above	3	1.4	1	.7	4	1.2

Total	209	100.0	138	39.8	347	100.0

Drinking Patterns

Among this rural Yi sample, 76.1% of participants reported drinking alcohol in the past year; 87.6% male and 58.7% female. Among those who drank in the past 12 months the proportion of drinkers increased with age. The rural Yi people aged from 18– 27, 67.9%; 28-37, 75.8%; 38-47, 75.3%; 48-57, 85.9%; and 58 and above, 72.7% with χ^2(df=4, n=347)=6.65, P<=.156.

Drinking Frequency

Males were significantly more likely than females to drink every day and more than three times a week.

Table 2

Drinking Frequency

	Male		Female		Total	
	N	**%**	**N**	**%**	N	%
Everyday	51	28.3	6	7.4	57	21.8
≥3 times /week	51	28.3	8	9.9	59	22.6
<3 times/ week	78	43.3	67	82.7	145	55.6
Total	180	100.0	81	100.0	261	100.0

χ^2 (df=2, n=261)=35.2, P<.0001

Type of Alcohol Consumed at Last Drinking Occasion

A total of 214 of the 261 drinkers (82%) answered this multiple-response question. The most frequent choice of alcohol was traditional alcohol (47.1%), followed by beer (32.3%) and other homemade wines (14.2 %). Males preferred traditional alcohol and females preferred beer.

Table 3

Alcohol type at last Drinking occasion

	Male		Female		Total	
	N	**%**	**N**	**%**	N	**%**
Traditional Liquor	106	52.0	40	37.7	146	47.1
Beer	58	28.4	42	39.6	100	32.3
Home-made wine	21	10.3	23	21.7	44	14.2
Commercial liquor	19	9.3	1	0.9	20	6.5
Total	204	100.0	106	100.0	310	100.0

Note: some respondents chose more than one type of alcohol for their last drink occasion

A larger proportion of older drinkers selected traditional alcohol and a larger proportion of younger drinkers selected beer.

Table 4

The Drinking Type at Last Drinking Occasion by age

	18 – 27		28 – 37		38 – 47		48 – 57		58 and above		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Traditional Liquor	2	4.0	1	1.6	5	7.4	7	9.5	5	8.9	20	6.5
Beer	27	54.0	29	46.8	22	32.4	12	16.2	10	17.8	100	32.3
Home-made Wine	11	22.0	21	33.9	34	50.0	46	62.2	34	60.7	146	47.1
Commercial Liquor	10	20.0	11	17.8	7	10.3	9	12.2	7	12.5	44	14.2
Total	50	100.0	62	100.0	68	100.0	74	100.0	56	100.0	310	100.0

Traditional Alcohol Use

A total of 264 of the 347 participants answered the question on traditional alcohol. 81.1% drank traditional alcohol in the past year. Of these, 85.2% of the males drank traditional alcohol and 71.6% of the females did the same. The proportion of rural Yi people who drank traditional alcohol increased with age: 18-27, 68.4%; 28-37, 72.0%; 38-47, 80.3%; 48-57, 89.6%; and 58 and older, 89.6%.

Of the males 30.9% reported drinking every day and 23.5% three or more times a week. Of the females 12.1% reported drinking every day, 8.6% three times or more a week, and 79.3% less than three times a week.

There was also a significant difference in traditional alcohol drinking by age, older people were more likely to drink traditional alcohol every day.

Table 5

Drinking Frequency of Traditional Alcohol by age

	18 – 27		28 – 37		38 – 47		48 – 57		58 and above		Total	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Everyday	1	4.0	4	12.1	14	29.2	15	25.4	19	45.2	53	25.6
≥3 times /week	7	28.0	7	21.2	11	22.9	13	22.0	2	4.8	40	19.3
<3 times/ week	17	68.0	22	66.7	23	47.9	31	52.5	21	50.0	114	55.1
Total	25	100.0	33	100.0	48	100.0	59	100.0	42	100.0	207	100.0

$\chi^2(df=8, n=208)=21.92$, P=.005

A total of 209 participants reported the proportion of alcohol consumption was traditional alcohol. More than half of the sample, both males (52.3%) and females (56.9%) reported more than half of their total alcohol consumption was traditional alcohol.

Table 6

Proportion of Traditional Alcohol Drinking among Overall Drinking by Gender

	Male		Female		Total	
	N	**%**	**N**	**%**	N	%
¼ or less	48	31.8	14	24.1	62	29.7
½	24	15.9	11	19.0	35	16.7
¾	51	33.8	12	20.7	63	30.1
all of it	28	18.5	21	36.2	49	23.4
Total	151	100.0	58	100.0	209	100.0

χ^2(df=3, n=209)=9.0, P=.029

A majority (63.3%) of participants preferred high ABV traditional alcohol, 61.2% of the males and 69.0% of females.

The Predictive Effect of the Model of TPB

Structural equation modeling was used to detect the predictive effect of attitude, normative beliefs, motivation to comply, and perceived behavioral control on drinking intention. After recoding, the dependent variable (construct) becomes a single item scale and an ordinal variable.

Structural Equation Model to Test the TPB

Mplus version 7.0 was utilized to run the structural equation model. The construct of intention was recoded by using SAS 9.3 into an ordinal variable. After recoding the intention scale the variable becomes categorical, because Mplus treated ordinal is a subset of categorical data. Therefore WRMR analysis (weighted root mean square residual) was appropriate for the analysis. The WRMR uses a variance-weighted approach and it has been tested with categorical. Yu (2002) suggested that WRMR of less than one indicates a good fit. CFI is not reported because programs do not recalculate incremental fit indices when dealing with categorical data. According to the data results ($\frac{x2}{df} = 2.10$; RMSEA=.06; WRMR=1.07), the fit indices did not indicate a good fit, but still show an acceptable fit.

Attitude toward the behavior, normative beliefs, and motivation to comply did not have a significant predictive effect on drinking intention, only perceived behavioral control shown a significant predictive effect. (See Figure 3.)
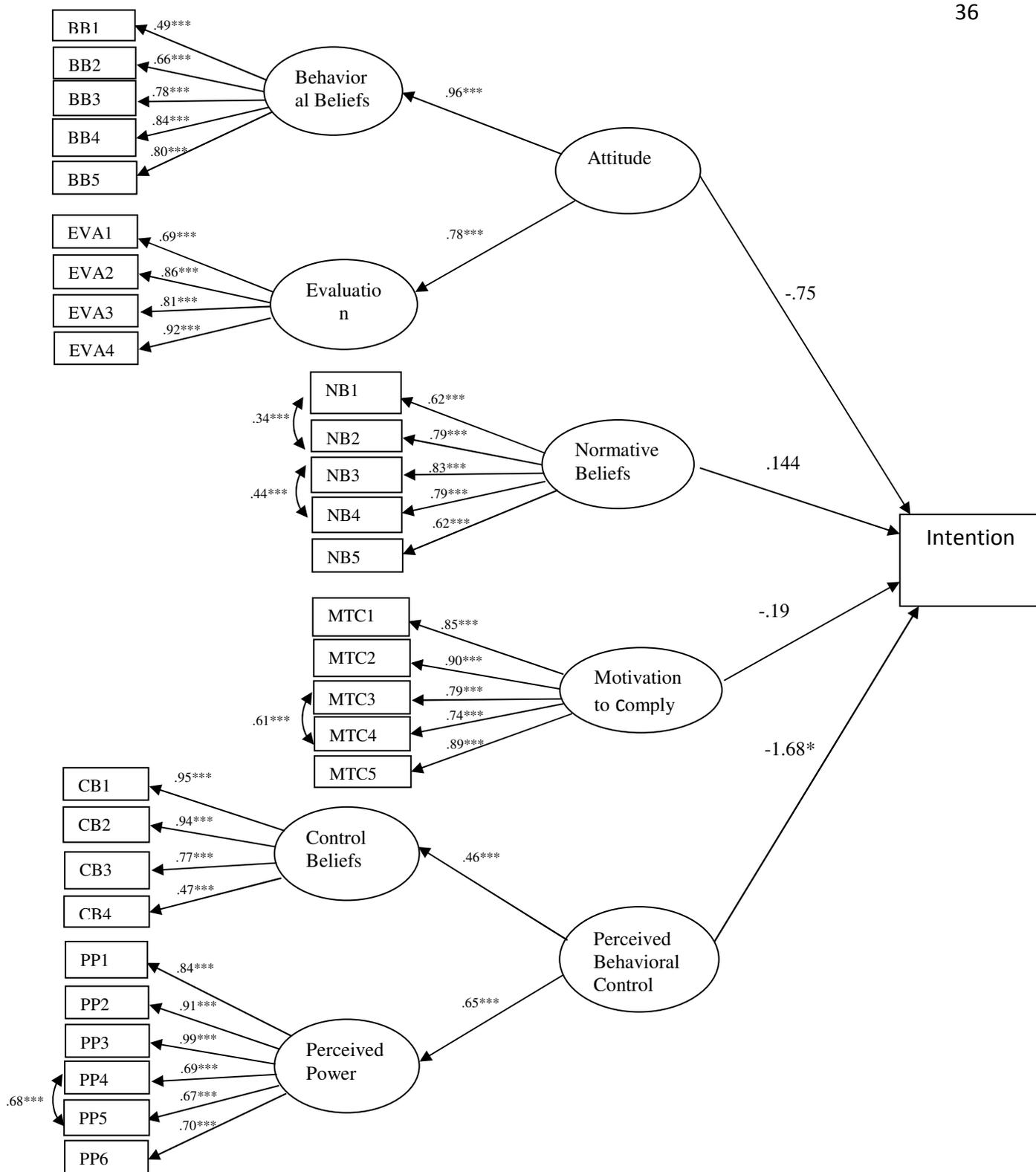
Figure 3. Structural equation model of TPB. *** indicates p<.001; ** indicates p<.01, *

indicates P<.05.

CHAPTER 5 DISCUSSION

The purpose for this study was to explore the drinking patterns among rural Yi minority and to see if the constructs of attitude, subjective norm, and perceived behavioral control, as conceptualized in the theory of theory of planned behavior, predicted the intention to use traditional alcohol among a sample of Yi people in southern China.

Drinking Patterns

Most rural Yi people (76.1%) drank alcohol in the past year, which is fewer than Newman and Qian's (2012) finding that all rural people drank in the past year in three provinces in China. The interpretation of drinking in the past year might be different from regions to regions and individual to individual. For example, some rural Yi minority think that to drink in the past year means regular drinking. Similarly, drinking on some occasions sometimes does not count as drinking as it is an expected part of the occasion, special celebrations, for example. There are reports that certain types of alcohol sometimes do not count as drinking. Beer, for example, sometimes is not considered alcohol. Future studies need to be more specific in the way they define alcohol and how they question and probe to determine drinking status.

 Among this sample of rural Yi people more males (87.6%) than females (58.7%) identified as drinkers. This finding is consistent with all other studies on alcohol drinking in China (Hao et al., 2005; WHO, 2014; Wu, Mao, Rockett, and Yue, 2008).

Drinking in China is considered a symbol of masculinity, and because alcohol is a relatively luxurious drink its use by males confirms the masculine rank. More drinking by the older people (85% of the people age 48–57) suggest a pattern of drinking different

from the pattern in most Western countries, where fewer older people than younger

people drink. This also suggests alcohol may have a special status in Yi society. In China,

in general, older people have higher status and are more deserving of special privileges

(Chan, 2010; Zhou, 2014). Also, older people have been less exposed to other types of

alcohol and to other western influences which may be a reason why younger people, who

are more exposed to western influences and other types of alcohol, were more likely to

drink beer (Hao et al., 2005; Zhang et al., 2007).

The suggestion that a larger proportion of males and of older people drink

because of status may also be the reason why the frequency of drinking among older

people and among men is higher. More than a half of males drank at least 3 times a week,

but only one-sixth of the females drank at least three times a week. The highest

percentage of frequent drinkers was among the 48- to 57-year-olds.

Traditional Alcohol Drinking

The limited exposure to western influences may be the reason why older Yi drank

distilled liquor when they drank commercial alcohol and why there was a relatively small

difference between the proportion of males and females who had drunk traditional

alcohol in the last year. There was a preference for high ABV alcohol among both

genders and across all ages. This perhaps is an acknowledgement of the status of

traditional alcohols, which are always high ABV, as an important traditional drink, as

good tasting, and of higher quality than other available alcohols like beer or even

commercial distilled alcohols. The proportion all alcohol consumed as traditional alcohol

increased among the older Yi. In addition to this being a reflection of traditional values

this may also reflect economics. Traditional alcohol is cheaper and the older people may have less disposable income.

Discussion of Attitude, Subjective Norms, and Perceived Behavioral Control

The constructs of attitude, subjective norm, and perceived behavioral control, as conceptualized in the theory of planned behavior, will predict the intention to use traditional alcohol among a sample of Yi people in southern China.

According to the structural equation model fit indices results, the theory of planned behavior is a plausible model to explain rural Yi minority drinking intention ($\frac{x2}{df}$ = 2.10; RMSEA=.06; WRMR=1.07). However, not all of the four predictive latent variables were significant in predicting drinking intention. Attitude toward alcohol drinking, normative beliefs and motivation to comply did not have statistically significant paths to drinking intention. Only perceived behavioral control was a significant predictor of drinking intention for this sample of rural Yi people.

Attitude

In the current study, attitude was not a significant predictor on traditional alcohol drinking intention for rural Yi people. In the other studies using TPB (Armitage et al., 1999; Collins et al., 2007; Collins et al., 2011; Glassman et al., 2009; Huchting et al., 2008), attitude was found to be a significant predictor of drinking intention among different populations. Collins and her colleagues (2011) and Glassman and his colleagues (2010) found that attitude was the strongest predictor on drinking intention for episodic heavy drinking among college students and social, high-risk, and extreme drinkers on game day. However, even in the same study, the strength of the predictive effect of attitude was different among different populations. The rural Yi minority had a favorable

attitude toward traditional alcohol and alcohol in general. Differences in attitudes toward drinking alcohol in China and in the West may explain part of the reason why attitude toward alcohol drinking did not have a significant prediction effect on intention in this population (Hao et al., 2005). The rural Yi people consider traditional alcohol as good for health and do not associate it with bad behavior, so even those who are not regular drinkers still have favorable attitudes toward traditional alcohol.

The mean of all the indicators in the attitude scale was $3.4 \pm .8$, and the mean of each of the nine indicators also was larger than the median value of the scale which was 3. This suggests that traditional alcohol was viewed positively among rural Yi people.

Subjective Norms

Subjective norm is represented by motivation to comply and normative beliefs and they were not significant predictors of intention to drink traditional alcohol. This result differs from the effect of subjective norms in previous studies among different groups. Huchting and his colleagues (2008) found that subjective norm was an effective predictor of intentions to drink among US sorority woman. Glassman and his colleagues (2010) also found that subjective norm was a significant predictor of intention to drink on game days for social, high-risk, and extreme drinkers. Other studies (Collins et al., 2007; Norman et al., 2006; Norman et al., 2007) report similar finding among heavy episodic and binge drinking college students.

The difference of the predictive effects of the subjective norm might be due to the very different groups used in this comparison. The subjective norm identifies referents' beliefs for the subject and how strongly the subject wants to comply with the referents' wishes. Among rural Yi people most referents have a positive attitude toward alcohol

and, as such, most subjects would believe their referents would want them to drink

traditional alcohol but would not be especially concerned if they did not. However,

referents might be concerned if someone did not follow their wishes if the drinking

occasion was a special occasion like a festival or a special ceremony. Future research

exploring this factor may want to consider the nature of the drinking occasion and its

effect on perceptions of subjective norms.

Perceived Behavioral Control

Perceived behavioral control is the only significant predictor of traditional alcohol

drinking among rural Yi people. These data indicated that the higher level of perceived

behavioral control rural Yi people had, the more likely they intended to not drink. Among

collected studies, most of them found similar results. Perceived behavioral control was a

significant predictor of drinking intention for different groups of people. Only a few

studies (Huchting et. al., 2008) found perceived behavioral control not a significant

predictor of drinking intention among people living in sorority, but it was a significant

predictor of drinking behavior.

Ajzen (2002) asserted that including both self-efficacy and controllability items

could boost the internal consistency of the perceived behavioral control construct. To

understand the relationships among controllability, self-efficacy, and drinking intention,

the investigator separated the responses to the perceived behavioral control items into two

perceived behavioral control sub-categories: controllability and self-efficacy. The results

indicated that both self-efficacy (path coefficient=-.31, P<.0000) and controllability (path

coefficient=-.27, p<.0001) were significant in predicting traditional alcohol drinking

intentions. After changing the model, normative beliefs within the construct of subjective norms showed a significant predictive effect on intention to drink traditional alcohol.

The significance of the perceived behavioral control construct in predicting traditional alcohol drinking intention indicated the importance of factors like accessibility, pricing, personal physical reaction, and the enjoyment of the taste. Both the controllability and self-efficacy to overcome the obstacles from these aspects were all significant to predict rural Yi minority's traditional alcohol drinking. This also confirms that alcohol drinking was more of a personal choice rather than a normative norm for rural Yi peoples' daily life. In other words, the intention to drink traditional alcohol was more likely to depend on the real interaction and constraints in their lives.

Perceived behavioral control was the most important aspect for maintaining or changing drinking intention of rural Yi people. Ajzen's suggestions to separate perceived behavioral control into controllability and self-efficacy deserved further study.

Limitations

For this study, a new questionnaire was developed to measure the constructs of TPB. Although the overall questionnaire was adequate to express the constructs conceptualized in TPB, it needs further refinement. The subjective norms scale did not work well in the first order.. Future study is needed to develop a more suitable measure for subjective norms in homogenous communities.

Convenience sampling was used in this study; therefore, results may not generalize to all rural Yi minority people. Nevertheless, the study still provide possible estimates of overall rural Yi minority drinking patterns and some motives for traditional alcohol drinking.

The model of the theory of planned behavior includes the measure of drinking behavior after an interval of time, usually one month later. Because of the time limitation and the remoteness of rural Yi minority villages, the researcher only collected one-time data. A further collection of data in the same location would add to the exploration of the predictive effect of TPB construction intention and on the actual drinking behavior.

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APPENDIX A

The Approval Letter of IRB

Nebraska
University of
Lincoln

October 9, 2014

Yonghua Feng
Department of Educational Psychology
3323 Starr St. Apt. #2 Lincoln, NE 68503

Ian Newman
Department of Educational Psychology
232 TEAC, UNL, 68588-0345

IRB Number:
Project ID: 14238
Project Title: Noncommercial alcohol use among Yi minority in China

Dear Yonghua:

The Institutional Review Board for the Protection of Human Subjects has completed its review of the Request for Change in Protocol submitted to the IRB.

1. It has been approved to revise the survey as outlined in the change request form.

We wish to remind you that the principal investigator is responsible for reporting to this Board any of the following events within 48 hours of the event:
* Any serious event (including on-site and off-site adverse events, injuries, side effects, deaths, or other problems) which in the opinion of the local investigator was unanticipated, involved risk to subjects or others, and was possibly related to the research procedures;
* Any serious accidental or unintentional change to the IRB-approved protocol that involves risk or has the potential to recur;
* Any publication in the literature, safety monitoring report, interim result or other finding that indicates an unexpected change to the risk/benefit ratio of the research;
* Any breach in confidentiality or compromise in data privacy related to the subject or others; or
* Any complaint of a subject that indicates an unanticipated risk or that cannot be resolved by the research staff.

This letter constitutes official notification of the approval of the protocol change. You are therefore authorized to implement this change accordingly.

If you have any questions, please contact the IRB office at 472-6965.

Sincerely,

Becky R. Freeman

Becky R. Freeman, CIP
for the IRB

APPENDIX B
彝族自酿酒（小灶酒）调查研究

联系受访者以及研究调查

　　　　"你好，我是帮助一个在美国需要完成毕业论文的一个学生作一个关于彝族人饮酒的研究调查。这个调查也是她需要用来写毕业论文的。所以我想征求您的意见是否可以参加本次的研究调查。本次的采访很简单，就是关于您或您的家人的一些饮酒的情况。我也会记录您的采访并会交给这个学生。""请问您愿意参与本次的调查研究吗？"

调查同意书

　　　　尊敬的受访者，

　　　　感谢你同意参加本次调查。如有什么问题可以联系封永华，她的联系方式为 13550921998. 本次调查研究，你的参与为自愿的，你也有权选择不参与本次调查。即使你中途想要退出本次调查，你也有权中途停止本次调查。本次调查主要是针对彝族人的饮酒情况，大概会花你 30 分钟完成本次调查。所调查的个人信息不会像被人展示，我们会写成毕业论文和报告当这个项目完成的时候。

　　　　你还有其他问题吗？

采访员基本信息

题号	问题及内容	答案处
Q0001	调查地点: 1.平地镇　2.大龙潭乡　3.盐边县　4.米易县	
Q0002	采访时间（年／月／日）	

第一部分：基本信息

题号	问题及内容	答案处
Q1001	民族：	
Q1002	年龄：	
Q1003	性别：1, 男性　　2,女性	
Q1004	职业： 1-种植业或养殖 2-司机　　3-建筑行业　　4-服务业 5-附近（附近）工厂工作　　　　7-其他	
Q1005	受教育程度： 1-没上过学 2-初中或以下　3-高中　4-技校或大专　　　5-大学或以上	

第二部分

6. 喝小灶酒或是自酿酒可以<u>增强我的体力</u>(干活有力气)
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　D-可能 E-非常可能

7. 喝小灶酒或是自酿酒可以<u>促进我的血液循环／或少得感冒</u>
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　D-可能 E-非常可能

8. 喝小灶酒或是自酿酒会使我<u>觉得快乐满足／或幸福</u>
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　D-可能 E-非常可能

9. 喝小灶酒或是自酿酒可以使我<u>舒经活血</u>
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　D-可能 E-非常可能

10. 喝小灶酒或是自酿酒可以<u>缓解疲劳</u>（累的时候喝点就不累）
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　D-可能 E-非常可能

11. 对我来说，通过喝小灶酒或是自酿酒来<u>提高我的体力</u>是
A-非常不好　　　　　　B-不好　　　　C-不知道　　　D-好　　　　　E-非常好

12.对我来说，通过喝小灶酒或是自酿酒来<u>增强我的血液循环</u>是
A-非常不好　　　　　　　　B-不好　　　　　C-不知道　　　　D-好　　　　　　　E-非常好
13.对我来说，通过喝小灶酒或是自酿酒来<u>提高我的快乐感满足感／或幸福感</u>是
A-非常不好　　　　　　　　B-不好　　　　　C-不知道　　　　D-好　　　　　　　E-非常好
14.对我来说，通过喝小灶酒或是自酿酒来<u>缓解疲劳</u>是
A-非常不好　　　　　　　　B-不好　　　　　C-不知道　　　　D-好　　　　　　　E-非常好

15.<u>我妻子／丈夫</u>同意我喝小灶酒或是自酿酒
A-非常对　　　　　　　　B-对　　　　　C-不知道　　　　　　D-不对　　　　　E-非常不对
16.我的<u>父母或兄弟姐妹</u>同意我喝小灶酒或是自酿酒
A-非常对　　　　　　　　B-对　　　　　C-不知道　　　　　　D-不对　　　　　E-非常不对
17.我的<u>朋友</u>同意我喝小灶酒或是自酿酒
A-非常对　　　　　　　　B-对　　　　　C-不知道　　　　　　D-不对　　　　　E-非常不对
18.我的<u>同事或是同一个村里的人</u>同意我喝小灶酒或是自酿酒
A-非常对　　　　　　　　B-对　　　　　C-不知道　　　　　　D-不对　　　　　E-非常不对
19.我的<u>岳父岳母</u>同意我喝小灶酒或是自酿酒
A-非常对　　　　　　　　B-对　　　　　C-不知道　　　　　　D-不对　　　　　E-非常不对

20.在喝小灶酒或自酿酒的事情上，你有多在意你的<u>妻子／丈夫</u>的看法
A-很在意　　　　　　　　B-在意　　　　　C-不知道　　　　　　　　D-不在意　　　　E-完全不在意
21. 在喝小灶酒或自酿酒的事情上，你有多在意你的<u>父母或是兄弟姐妹</u>的看法
A-很在意　　　　　　　　B-在意　　　　　C-不知道　　　　　　　　D-不在意　　　　E-完全不在意
22. 在喝小灶酒或自酿酒的事情上，你有多在意你的<u>好朋友</u>的看法
A-很在意　　　　　　　　B-在意　　　　　C-不知道　　　　　　　　D-不在意　　　　E-完全不在意
23. 在喝小灶酒或自酿酒的事情上，你有多在意你的<u>同事或是同村人</u>的看法
A-很在意　　　　　　　　B-在意　　　　　C-不知道　　　　　　　　D-不在意　　　　E-完全不在意
24. 在喝小灶酒或自酿酒的事情上，你有多在意你的<u>岳父岳母</u>的看法
A-很在意　　　　　　　　B-在意　　　　　C-不知道　　　　　　　　D-不在意　　　　E-完全不在意

25.喝小灶酒或自酿酒后<u>觉得难受像生病一样</u>，对你来说是
A-非常少见　　　　　　　　B-少见　　　　　C-不知道　　　　　　　　D-常见　　　　E-经常这样
26.喝完小灶酒或自酿酒后<u>觉得很累</u>，对你来说是
A-非常少见　　　　　　　　B-少见　　　　　C-不知道　　　　　　　　D-常见　　　　E-经常这样
27.喝完小灶酒或自酿酒后<u>觉得困倦想睡觉</u>，对你来说是
A-非常少见　　　　　　　　B-少见　　　　　C-不知道　　　　　　　　D-常见　　　　E-经常这样
28.对你来说，<u>喝小灶酒或自酿酒有点经济压力</u>，
A-非常少见　　　　　　　　B-少见　　　　　C-不知道　　　　　　　　D-常见　　　　E-经常这样
29.对你来说，小灶酒很<u>容易买得着</u>
A-非常对　　　　　　　　B-对　　　　　C-不知道　　　　　　　　D-不对　　　　E-非常不对
30.我不喜欢小灶酒或自酿酒的味道
A-非常对　　　　　　　　B-对　　　　　C-不知道　　　　　　　　D-不对　　　　E-非常不对

31.喝了小灶酒或自酿酒后，<u>如果我觉得难受像生病一样</u>，我以后就不愿意喝小灶酒或自酿酒
A-非常不同意　　　　　　　　B-不同意　　　　　C-不知道　　　　D-同意　　　　E-非常同意
32. 喝了小灶酒或自酿酒后，<u>如果我觉得疲劳</u>，我以后就不愿意喝小灶酒或自酿酒
A-非常不同意　　　　　　　　B-不同意　　　　　C-不知道　　　　D-同意　　　　E-非常同意

33. 喝了小灶酒或自酿酒后，<u>如果我觉得困倦想睡觉</u>，我以后就不愿意喝小灶酒或自酿酒
A-非常不同意　　　　　　　　B-不同意　　　　　C-不知道　　　　　　　　D-同意　　　　E-非常同意

34.若我有经济压力去买小灶酒或自酿酒，我以后就不愿喝小灶酒或自酿酒
A-非常不同意　　　　　　B-不同意　　　　C-不知道　　　　　　D-同意　　　　　E-非常同意
35.若我很难找到地方买小灶酒或自酿酒，我以后就不愿喝小灶酒或自酿酒
A-非常不同意　　　　　　B-不同意　　　　C-不知道　　　　　　D-同意　　　　　E-非常同意
36.若我不喜欢小灶酒或自酿酒的味道，我以后就不愿喝小灶酒或自酿酒
A-非常不同意　　　　　　B-不同意　　　　C-不知道　　　　　　D-同意　　　　　E-非常同意

37.我会每天都喝点小灶酒或自酿酒
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　　　D-可能　　　　　E-非常可能
38.我可能在接下来的两周内至少喝一次小灶酒或自酿酒
A-非常不对　　　　　　　B-不对　　　　　C-不知道　　　　　　D-对　　　　　　E-非常对
39.我将会在接下来的一个月内至少喝一次小灶酒或自酿酒
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　　　D-可能　　　　　E-非常可能
40.我将会在接下来的半年内至少喝一次小灶酒或自酿酒
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　　　D-可能　　　　　E-非常可能
41.我以后至少会喝一次小灶酒或自酿酒
A-非常不可能　　　　　　B-不可能　　　　C-不知道　　　　　　D-可能　　　　　E-非常可能

第三部分，饮酒行为

题号	问题及内容		答案处
Q42	你在过去的12月中喝过酒吗？ 1-喝过　2-没喝过		
Q43	你喝酒有多频繁？ 1-每天　2-一周至少三次但不是每天 (12<喝酒次数／每月<30） 3-一周少于三次 (0<喝酒次数／每月<12)		
Q44	你在过去的12月内喝过散装酒没？ 1-喝过　2-没喝过		
Q45	你上次饮酒的类型是（*除节假日或特殊节日如：婚宴，丧事等*） 1-商业白酒　2-啤酒　3-自酿白酒　4-自酿米酒　5-自酿其他种类酒类		
如果你在过去的12个月内喝过散装酒，请继续填写以下内容。若是没有，感谢你完成本次调查。			
Q46	你喝散装酒有多频繁？ 1-每天　2-一周至少三次但不是每天 (12<喝酒次数／每月<30）3-一周少于三次 (0<喝酒次数／每月<12)		
Q47	你喝的散装酒占你所喝的酒的多少？ 1- 少于四分之一　2- 一半　　3-四分之三　　　4- 全部		
Q48	你喝的散装酒的度数是？ 1- 高度酒　2- 低度酒		

本次调查结束，谢谢您的参与！

Rural Yi Traditional Alcohol Drinking Survey
(English Translation)

Respondent Contact and Research Introduction

"I am helping a student from this area, who is completing their education in the United States. Part of the student's requirement is to write a paper about some characteristics of the Yi people. She is particularly interested in how we use traditional alcohol in the traditional manner, so I would like to ask you some questions about traditional alcohol and how it is used and your family and in this village. I will be recording some answers that I will give to Yonghua to help her writer her paper. "

"Are you willing to talk with me about the subject and help Yonghua with her project?"

(If no, there is a polite thank you, and no further comment).

If the answer is yes the consent form will be read and discussed prior to the interview.

Survey Consent

Dear interviewees,

Thanks for agreeing to help.

The purpose of this survey is to better understand the traditional alcohol drinking among rural Yi people. As I said a few minutes ago. This project will help Feng Yonghua , who is a student at University of Nebraska in the United States. She is here in our village. If you would like to meet her or you have special questions I can have her visit you. Or you can call her on her mobile 13550921998.

Your participation in this project is voluntary. You may choose not to participate. If you decide to participate and change your mind after we begin you may withdraw at any time. If you decide to withdraw from participating you will not be penalized.

The procedure involves answer questions about traditional alcohol. The process will take approximately 30 minutes. Your answers to questions will be noted on a survey questionnaire but your name and address will not be recorded.

All the information we collect will not be shown to anyone else. We will put all the information from all the people we talk to together and write a report when the project is finished.

Do you have any questions?

Questionnaire
Interview information

Question number	Question and question choices	Answers
Q0001	Interview site code: 1. Pingdi county 2.Dalongtan county 3.Yanbian county 4.Miyi county	
Q0002	Investigate Date (Year/Month/Day)	

Part 1: Demographic Information

Question number	Question and question choices	Answers
Q1001	Race:	
Q1002	Your age	
Q1003	Your gender: 1-Male 2-Female	
Q1004	Your occupation: 1-farmer 2-Driver 3-Construction worker 4-Service Business 5-Worker in local factory 7-Other	
Q1005	Your Education: 1-Illiterate 2-Elementary school or below 3-Junior high 4-Senior high/Technical secondary school 5-Junior College and above	

Part 2: Questions for TPB among Yi traditional alcohol use

Attitude:

    Behavioral beliefs

    6, drinking traditional alcohol help to improve my physical strength

A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

7, drinking traditional alcohol help to increase my blood circulation/away from cold
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

8, drinking traditional alcohol make me feel satisfied/happy/blessed
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

9, drinking traditional alcohol make me feel warm
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

10, drinking traditional alcohol help me to reduce fatigue/tiredness
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

Evaluation
11, for me, to improve my physical strength by drinking traditional alcohol is
A-Extremely bad   B-Bad   C-Neither Good nor bad   D-Good   E-Extremely good

12, for me, to increase my blood circulation/keep cold away by drinking traditional alcohol is
A-Extremely bad   B-Bad   C-Neither Good nor bad   D-Good   E-Extremely good

13, for me, to make me satisfied/happy/blessed by drinking traditional alcohol is
A-Extremely bad   B-Bad   C-Neither Good nor bad   D-Good   E-Extremely good

14, for me, to reduce fatigue by drinking traditional alcohol is
A-Extremely bad   B-Bad   C-Neither Good nor bad   D-Good   E-Extremely good

Subjective norms
Normative beliefs /norms
15, my wife/husband thinks that I should drink traditional alcohol
A-Strongly agree   B-Agree   C- Neither disagree nor agree D-Disagree   E-Strongly disagree

16, my parents or sisters/brothers think that I should drink traditional alcohol
A-Strongly agree   B-Agree   C- Neither disagree nor agree D-Disagree   E-Strongly disagree

17, my close friends think that I should drink traditional alcohol
A-Strongly agree   B-Agree   C- Neither disagree nor agree D-Disagree   E-Strongly disagree

18, my peers/village residents think that I should drink traditional alcohol
A-Strongly agree   B-Agree   C- Neither disagree nor agree D-Disagree   E-Strongly disagree

19, my parents-in-law think that I should drink traditional alcohol
A-Strongly agree   B-Agree   C- Neither disagree nor agree D-Disagree   E-Strongly disagree

Motivation to comply
20, generally, how much do you care your wife/husband's opinion on your traditional alcohol drinking?
A-Not at all   B-Do not care C-Undecided   D-Care   E-Very much

21, generally, how much do you care your parents or sisters/brothers' opinion on your traditional alcohol drinking?
A-Not at all   B-Do not care C-Undecided   D-Care   E-Very much

22, generally, how much do you care your close friends' opinion on your traditional alcohol drinking?
A-Not at all   B-Do not care C-Undecided   D-Care   E-Very much

23, generally, how much do you care your peers/village residents' opinion on your traditional alcohol drinking?
A-Not at all   B-Do not care C-Undecided   D-Care   E-Very much

24, generally, how much do you care your parents-in-law opinion on your traditional alcohol drinking?
A-Not at all   B-Do not care C-Undecided   D-Care   E-Very much

Perceived behavioral control
Control beliefs:
25, How often do you feel ill after you have traditional alcohol drinking
A-Very rare   B-Rare   C-Don't know   D-Often   E-Very often

26, how often do you feel tired after you have traditional alcohol drinking

A-Very rare   B-Rare   C-Don't know   D-Often   E-Very often

27, how often do you feel sleepy after you have traditional alcohol
A-Very rare   B-Rare   C-Don't know   D-Often   E-Very often

28, how often do you feel you have economic difficulty to drink traditional alcohol
A-Very rare   B-Rare   C-Don't know   D-Often   E-Very often

29, how often do you feel you have difficulty to access traditional alcohol drinking
A-Very rare   B-Rare   C-Don't know   D-Often   E-Very often

30, I don't like the taste of traditional alcohol
A-Very true   B-true   C-Don't know   D-false   E-Very false

Perceived power

31, if I feel sick after traditional alcohol drinking, I would not drink it in the future.
A-Strongly disagree   B-Disagree   C- Neither disagree nor agree D-Agree   E-Strongly agree

32, if I feel tired after traditional alcohol drinking, I would not drink it in the future.
A-Strongly disagree   B-Disagree   C- Neither disagree nor agree D-Agree   E-Strongly agree

33, if I feel sleepy after traditional alcohol drinking, I would not drink it in the future.
A-Strongly disagree   B-Disagree   C- Neither disagree nor agree D-Agree   E-Strongly agree

34, if I cannot afford traditional alcohol drinking, I would not drink it in the future.
A-Strongly disagree   B-Disagree   C- Neither disagree nor agree D-Agree   E-Strongly agree

35, if it is hard to find a place to buy or make traditional alcohol, I would not drink it in the future.
A-Strongly disagree   B-Disagree   C- Neither disagree nor agree D-Agree   E-Strongly agree

36, if I do not like the taste of traditional alcohol I would not drink it in the future.
A-Strongly disagree   B-Disagree   C- Neither disagree nor agree D-Agree   E-Strongly agree

Intention

       37, I intend to drink traditional alcohol everyday
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

       38, I intend to drink traditional alcohol in the next two weeks.
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

       39, I intend to drink traditional alcohol in the next month.
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

       40, I intend to drink traditional alcohol in the next six month
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

       41, I intend to drink traditional alcohol in next year
A-Extremely unlikely B:-Unlikely   C-Neither unlikely nor likely D-Likely   E-Very Likely

Part 3: Drinking Behavior

Question number	Question and question choices	Answers
Q42	Do you drink in the past year (non-calendar year)? 1-Yes 2-No	
Q43	How often do you drink? 1-Every day 2-At least three times a week, but not every day (12<drinking <30 per month) 3-less than three times a week (0<drinking<12 per month)	
Q44	Do you drink traditional alcohol in the past year? 1-Yes 2-No	
Q45	What type of alcohol did you drink last time? (Except festivals and special events such as wedding and birthday party) 1-Commerical alcohol 2-Beer 3-Traditional alcohol 4-Homemade rice wine 5-Other type of homemade alcohol	
If you drank noncommercial traditional alcohol in the past year, continue to answer the following questions. Otherwise, you finish this survey.		
Q46	How often do you drink traditional alcohol? 1-Every day 2-At least three times a week, but not every day (12<drinking <30 per month) 3-less than three times a week (0<drinking<12 per month)	
Q47	What is the proportion of noncommercial traditional alcohol	

	you drank among your total traditional alcohol drinking? 1- ¼ or less 2- a half 3- ¾ 4- All of it	
Q48	The noncommercial traditional alcohol you drank is: 1- High ABV 2- Low ABV	

This is the end of the survey! Thanks for your participation!