MLPC STUDY GROUP REPORT

A constitute of Govt. of Mizoram to study the socio-economic impacts and to evaluate the effects of MLPC Act, 2014

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PROLOGUE

The Study Group is a constitute of Govt. of Mizoram to study the socio-economic impacts and to evaluate the effects of MPLC Act, 2014

The study uses the economic tool – Social Cost and Benefit Analysis (SCBA) recommended by UNIDO for pre-evaluation of any project/policy. Consultation groups and government policy-makers use SCBA internationally in the subject of alcohol.

The Study Group appoints a sub-set of competent research associates (RA) to aid the Principal Investigator:

- Vanlalmuana – JRF-UGC qualified, Assistant Professor of Commerce, ICFAI University, Mizoram
- Lalnunmawii Ralte - JRF-UGC qualified, Assistant Professor of Commerce, ICFAI University, Mizoram
- Laldingliani - Assistant Professor of Commerce, ICFAI University, Mizoram
- Lalrindika Sailo – JRF-UGC qualified, Visiting Faculty of Commerce, ICFAI University, Mizoram
- Jeremy Remlalfaka – Did his post-graduate project work on economic analysis of alcohol in Aizawl

The Principal Investigator visited National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore in September 2017 for discussion on research methodology with Prof. Vivek Benegal, Centre for Addiction Medicine, NIMHANS who had done similar study in Karnataka.

In line of prior studies conducted in Karnataka and elsewhere, along with an adaptation of The Netherlands (RIVM Report 2016), the Study Group formulated a definite framework for proceeding its own study

The following time-line denotes activities of the study-group:

Sl. No.	Activities	Month					
		1	2	3	4	5	6
1	Recruitment of Research Associates						
2	Review of existing literatures and studies						
3	Developing of various instruments for data collection						
4	Data collection						
5	Data tabulation						
6	Data analysis & interpretation						
7	Consultations & summarization						
8	Presentation before study group & finalization of report						
9	Publication and submission of final report						

The pre-submission report was reviewed by Prof. Vivek Benegal (NIMHANS) and Prof. NVR Jyoti Kumar, Dean of SEMIS, MZU on 2nd March, 2018 at Aizawl Club.
Despite limitations of less time factor and no data preceding MLPC, the study was appreciated by both external experts.

National Institute of Mental Health & Neuro Sciences
(Institute of National Importance), Bangalore –560 029
राष्ट्रीय मानसिक स्वास्थ्य एवं तंत्रिका विज्ञान संस्थान, (राष्ट्रीय महत्व का संस्थान), बेंगलूर -560029
ರಾಷ್ಟ್ರೀಯ ಮಾನಸಿಕ ಆರೋಗ್ಯ ಮತ್ತು ನರ ವಿಜ್ಞಾನ ಸಂಸ್ಥೆ, (ರಾಷ್ಟ್ರೀಯ ಪ್ರಾಮುಖ್ಯತಾ ಸಂಸ್ಥೆ), ಬೆಂಗಳೂರು -560029

5 June 2018

Mr. Laldinliana Varte
Mizoram Liquor Prohibition & Control Act Study Group
Aizawl, Mizoram

Dear Mr. Laldinliana Varte

Thank you for sharing the report of the study on the costs of alcohol use in Mizoram, undertaken by the Mizoram Liquor Prohibition & Control Act Study Group, constituted by Government of Mizoram.

I am happy to confirm that the social cost benefit analysis of alcohol in Aizawl, is indeed an admirable effort to understand the social costs of alcohol in the state, and that the methodology adopted is both appropriate and commendable.

Warm regards

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A. Introduction

A social cost benefit analysis is a systematic and cohesive method to survey all the impacts caused by an (urban) development project or other policy measure. It comprises not just the financial effects (investment costs, direct benefits like profits, taxes and fees, et cetera), but all the societal effects, like: pollution, environment, safety, travel times, spatial quality, health, indirect (i.e. labour or real estate) market impacts, legal aspects, et cetera. The main aim of a social cost benefit analysis is to attach a price to as many effects as possible in order to uniformly weigh the above-mentioned heterogeneous effects. As a result, these prices reflect the value a society attaches to the caused effects, enabling the decision maker to form an opinion about the net social welfare effects of a project.

The social cost benefit analysis calculates the direct (primary), indirect (secondary) and external effects:

- Direct effects are the costs and benefits that can be directly linked to the owners/users of the project/policy properties.
- Indirect effects are the costs and benefits that are passed on to the stakeholders outside the market with which the project/policy is involved
- External effects are the costs and benefits that cannot be passed on to any existing markets because they relate to issues like the environment, safety and nature.

The results of a social cost benefit analysis are:

- An integrated way of comparing the different effects. All relevant costs and benefits of the different project implementations (alternatives) are identified and monetized as far as possible. Effects that cannot be monetized are described and quantified as much as possible.
- Attention for the distribution of costs and benefits. The benefits of a project do not always get to the groups bearing the costs. A social cost benefit analysis gives insight in who bears the costs and who derives the benefits.
- Comparison of the project alternatives. A social cost benefit analysis is a good method to show the differences between project alternatives and provides information to make a well informed decision.
- Presentation of the uncertainties and risks. A social cost benefit analysis has several methods to take economic risks and uncertainties into account. The policy decision should be based on calculated risk.

The consumption of alcohol affects physical and psychological well-being of individuals. Yet many individuals, who are perhaps aware of its negative effects, still consume it. Recent studies have shown that alcohol dependent workers may affect productivity. On the other hand the consumption of alcohol supports an industry and its employees. The government also earns a large portion of its revenues directly from the alcohol industry. It also brings substantial benefits to consumers, who (apart from the small minority who are addicted) would not otherwise buy the product. Much research has compared the numbers for these various costs and benefits, including government outlays to treat ill health or protect people from crime that may be attributable to alcohol consumption.

B. Identifying stakeholders/sectors

An SCBA is a systematic method to value the impact of policy measures. SCBA is rooted in welfare economics. Related to alcohol, this classical economic approach assumes that people consume alcohol to fulfil a (perceived) need: they derive utilities from alcohol use in terms of e.g. (perceived) well-being. Thus, in the short run, the expenses for alcohol are justified by consumers on the basis of this perceived well-being. Alcohol consumption leads to revenues for various parties involved in supplying the alcoholic drinks, such as the Government (taxes, duties), retailers, and producers of alcoholic beverages. Restrictions in the consumption of alcohol, e.g. by increasing excise taxes or restricting outlet points, will then lead to a loss of welfare for consumers; they suffer a loss of “consumer surplus”. Producers and retailers may suffer a loss of welfare as well, as their revenues will be reduced, possibly affecting their “producer surplus”. The effect on the Government’s income will depend on the price elasticity of demand for alcohol, the relative change in consumption occurring

with a relative change in price: it may reduce, because of lower consumption; alternatively, it may remain stable or even rise, when loss of sales is compensated for by the increase in duties.

However, in the longer term, the welfare impact of a change in alcohol consumption is much wider. This is due to various reasons such as the occurrence of addiction to alcohol (making consumption a less voluntary choice) and social, psychological and medical effects of alcohol consumption. Effects of alcohol consumption do no only occur in the consumer of alcohol, but others in society may be affected as well, e.g. after traffic accidents or violence following alcohol use. Such effects can, in welfare theoretic terms, be called external effects. To illustrate: as alcohol may adversely impact on the health of individuals, this may lead to an increase in healthcare costs, which is only partially incurred by the consumer. Substantial effects of alcohol consumption are only visible in the long run and may be (largely) external to the consumer, as others in society also pay for the costs associated with these adverse health effects via health insurance premiums. Additionally, the consumer does not take these costs into account when deciding on consumption and may underestimate the risk of future healthcare costs rising as a consequence of his behaviour. Similarly, changes in crime rates and labour productivity may occur, with substantial effects not only for the consumer, but also for other parties in society.

This research design looks at ten (10) main stakeholders in the market of alcohol – the consumer, retailers/business houses, taxes and duties, healthcare, education, police & judicial efforts, public authority, Church and community, others in the society and lastly other externalities.

The following table demonstrates the scope of each sector/stakeholders as follows:

Sector	Costs	Benefits
Consumer	Traffic accidents, violence, productivity losses, premature death, loss of quality of life	Consumer surplus
Retail	[redacted]	Retail industry, liquor stores, employments generated
Tax		Taxes and duties
Healthcare	Health care costs of alcohol related diseases	Healthcare savings from alcohol consumption (diseases averted by drinking)
Education	Study delay, drop-outs etc.	[redacted]
Police and justice	Police efforts, asylums and judicial costs	
Public authority	Education, campaigns, costs of enforcements	
Church and Community	Efforts by church, YMA and other NGOs	
Others in society (family members/victims)	Vandalism, domestic violence, accidents, premature mortality, loss of quality of life, productivity losses, healthcare costs	
Other externalities	Hard drug abuses, HIV/AIDS, unplanned pregnancy, etc.	Evasion of use of other intoxications

C. Guidelines for operation

Following the standard guideline for SCBA (Romijn & Renes, 2013), the research strategy is developed along the following five steps –

Step 1: Scoping the problem

As a first step, describing the width and breadth of alcohol use in the Aizawl population in terms of its prevalence and consequences, and the trends under the current set of alcohol-related policies will be the initial endeavour. The main aim of this step is to describe the state of affairs of the current regulatory policies for alcohol in the Netherlands. This serves as the starting point for the SCBA. In order to come to an assessment of policy options to reduce (excess) use of alcohol, an overview of the various economic consequences of alcohol use will be given first. Here, we benefit from the work that was done in the context of answering the first research question, the cross-sectional assessment of costs and benefits of alcohol for the year 2016-17.

The following parameters are to be quantified so as to compare the variance between social cost and social benefits incurred by alcohol in Aizawl during 2016-17.

1. Consumers
    - Consumer surplus
    - Accidents (traffic, work, etc.);
    - Acts of nuisance; violence; crime; etc.
    - Loss of productivity (labor productivity; unavailability for labor market);
    - Effects on quality of life / wellbeing / premature death

2. Producers, retail
    - Producer surplus
    - Revenues for bars, restaurants, sport canteens
    - Employment
3. Taxes and duties
    - Revenues from taxes and duties
4. Healthcare
    - Emergency department visits

- Costs of treatment of alcohol-related diseases and injuries
- Any health benefits derived from use of alcohol

5. Education
    - School results; counselling of students; repeating classes
    - Lifetime costs of early school dropout / lower qualifications and lower future income
6. Police, justice
    - Reaction costs (police action etc.)
    - Detention costs
7. Public authority (Government)
    - Regulatory costs / implementation costs for policy measures (campaigns etc)
    - Enforcement and control
8. Church and Community
    - Efforts made by the Church in forms of campaigns/camping/crusades/rehabilitations of alcohol users
    - YMA, VDP, JAC vigilance and other efforts
9. Others in society (non-users of alcohol / victims)
    - Alcohol-induced vandalism and (domestic) violence;
    - Wellbeing of close relatives
    - Damage from traffic accidents; damage from crime; violence
    - Healthcare costs for non-users of alcohol
    - Productivity losses for non-users of alcohol
    - Effects on quality of life / wellbeing / premature death
10. Other externalities
    - Increase in hard drugs usage/seized, possible occurrence of unplanned pregnancy and spread of STDs under influence of alcohol
    - Whether previous hard drug users switch over to alcohol after lifting of prohibition

Step 2: Determine the reference scenario based on current policies

Defining the reference scenario is crucial, because this will be the scenario to which the impacts of the new regulatory policies will be compared. Therefore, the reference scenario describes the current state of affairs (status quo) and how this will autonomously develop over time, i.e. without changes in alcohol policy but taking into account the demographic changes and autonomous trends (if any). In this SCBA, the time horizon is set at 50 years. This time-horizon was chosen as the model is of long-term impact of policy measures.

Step 3: Conduct sensitivity analyses to assess the robustness of outcomes

The main analysis conducted in step 4 and 5 is subjected to sensitivity analyses to assess the robustness of the study's outcomes in relation to the different assumptions made.

Step 4: Assess the present value of costs and benefits and their distribution over stakeholders

At this step, computation of the net present value of all costs and benefits for the appropriate base year. Costs and benefits are shown for each group of stakeholders. Costs and benefits will be reviewed over a time period of 50 years. Some intangible costs and benefits cannot be meaningfully converted into monetary terms. One example relates to family members of alcoholics, who may be potential victim of domestic violence. Those costs will be not be valued monetarily but listed as *pro memori* (PM) costs or benefits.

Step 5: Present the outcomes

The report will comprise of the outcomes of the main analysis and the sensitivity analyses in agreement with the guideline for reporting economic evaluations in a transparent and replicable way (Husereau et al., 2013). This is done for each of the policy options under review and includes a list of the non-monetized costs and benefits.

D. Approach to splitting monetary costs and benefits in financial and non-financial rupees

Central to the concept of SCBA is that all costs and all effects are valued monetarily. This equally concerns "real" costs, such as damage to vehicles after a car accident and "virtual" costs, such as the value put on a Quality Adjusted Life Year. Consumer surplus consists of demand effects and price effects. Price effects reflect the fact that consumer surplus will be lower because of higher prices of alcohol in (some) policy scenarios, while demand effect reflects the fact that lower consumption results in lower consumer surplus. The demand effect will be covered as non-financial rupees, the price effect as financial rupees. All other costs and benefits are regarded as financial rupees.

E. Quantifications of sectors/stakeholders

E.1. Consumers

This section deals with the welfare effects those consumers of alcohol experience in Aizawl during the year 2016-17. It outlines both the aspects of consumption that contribute to the welfare of the consumers, and the aspects of consumption that reduce their welfare. In this section the effects that consumers themselves experience will be the area of focus. The effects that their consumption inflicts on others in society are as much as possible. In some cases, though, available information may not allow such a strict distinction.

E.1.1 Consumer surplus

The consumption of alcohol is based on a need that consumers desire to be satisfied. In economic terms, this means that they derive utility from the consumption of alcohol. The utility (or benefit) they derive from it has, at least, the value of costs that they have to make in order to be able to consume the alcohol, i.e. the price they have to pay in the shop, bar or elsewhere. Also, the costs associated with going to the shop, bar etc. (i.e. the time spent in travelling, the out-of-pocket expenses of the trip) may be included in the total costs of consumption, although in many cases such costs are perceived to be low (e.g. most consumers will attach a low negative value to the time spent to go to a bar or restaurant). Many consumers are willing to pay even more for alcohol, as the value they attach to it is higher than the price they actually pay. This extra value that consumers attach to consumption, above the price actually paid, is called consumer surplus. This consumer surplus is not actually paid for by consumers, but is the extra surplus they would be willing to pay to satisfy their needs. The higher the price of alcohol, the fewer consumers would be willing and able to pay in addition to what they already pay. Some consumers may already decide to drink less with a slight price increase. Other consumers may decide to continue drinking, even at much higher prices.

The actual consumer surplus for consumption cannot be measured exactly. It is usually derived from the demand curve of alcohol consumption. However, as the demand curve is not fully known (it is unknown what the willingness to pay of the last consumer of alcohol would be), assessments of consumers surplus can only be tentative. An assessment starts, however, with information on actual consumption of alcohol and evidence on the price elasticity of demand for alcohol.

To estimate the consumer surplus, a demand curve has to be specified. A demand curve gives the relation between the price of an alcoholic drink and its consumption. In economics, this relationship is summarized by the concept of price elasticity of demand.

Anderson et al., cite three meta-analyses in which average price elasticity were obtained (Anderson et al., 2012). These three meta-analyses are summarized in following table.

Source / Type of alcohol	Spirits	Wine	Beer	All alcohol
Fogarty, 2006	-0.70	-0.77	-0.38	n/a
Gallet, 2007	-0.68	-0.70	-0.36	-0.50
Wagenaar e.a., 2009	-0.80	-0.69	-0.46	-0.51

One of the three studies mentioned by Anderson has been carried out by Wagenaar et al. This is the most comprehensive meta-analysis that takes into account information from 112 studies.

The above also implies that 99.5% of alcohol consumption would not be affected by 1% price increase. Thus, for 99.5% of the consumption the actual willingness to pay of consumers is at least 1% above the actual price level. The price elasticity of demand usually only applies to the actual level of consumption and prices. It may thus not be applied straightaway to all consumption. In other words, it may not be concluded that a 200% increase in price means that total consumption of alcohol would

drop by 100% (i.e., that alcohol consumption would disappear completely). Even at much higher price levels, some consumers are still likely to consume. Nevertheless, it is clear that using a constant price elasticity of demand, i.e. a linear demand curve, can give a rough indication of the magnitude of welfare that consumers may attach to consumption of alcohol.

With respect to serious injuries due to traffic accidents, a similar range applies. Given the absolute number of seriously injured traffic participants in 2013 (18,800) (SWOV), 2,070 (11%) to 4,510 (24%) serious injuries can be attributed to alcohol use, according to Houwing et al (Houwing, 2014). Other studies show that the majority of alcohol-related accidents are caused by traffic participants with a high level of alcohol consumption (blood alcohol concentration –BAC- level of more than 1.3 g/l). The majority of these accidents can be attributed to young males (binge drinking) and chronic heavy users of alcohol. Based on Dutch data from the international DRUID study it can be assumed that the share of such heavy users in total alcohol related accidents is 67% (Isalberti et al., 2011).

E.1.2 Welfare costs of traffic accidents

To calculate the total welfare impact of alcohol-related traffic accidents, the following elements need to be taken into account (de Wit & Methorst, 2012):

- Costs of medical treatment, based on medical expenses;
- Loss of labor productivity, using average productivity in all sectors;
- Premature mortality, based on estimates of Value of a Statistical Life;
- Material costs (damage to vehicles, road infrastructure), based on actual data;
- Accident follow-up costs: costs of police, emergency services, insurance companies, etc., based on actual data;
- Congestion, based on assessment of extra congestion hours and a valuation of the travel time, following the willingness-to-pay (WTP) principle.

Of these six types of costs, it is difficult to disentangle costs in consumers of alcohol and non-consumers of alcohol (all other consumers). The first three types may predominantly apply to alcohol consumers. The latter three types of costs, material costs (through insurance premiums borne by all consumers), accident follow-up costs (through taxes and insurance premiums), and congestion costs are mostly borne by all consumers.

E.1.3 Premature mortality

Alcohol use may lead to premature mortality in a large number of situations, such as traffic accidents, alcohol-related cancer deaths and death from alcohol addiction. For the present study, Present Value of Future Annuity (Growth) will be used to calculate value of life foregone. The formula is as below-

$$\frac{P}{(r-g)}\left[1-\left(\frac{1+g}{1+r}\right)^{n}\right]$$

where P = Per capita income (2016-17); r = Inflation rate (urban); g = Expected growth rate; n= no. of years expected to live

E.1.4 Productivity losses

After drinking alcohol or after developing diseases caused by alcohol, workers may both be absent from work (absenteeism) or be present at work but with reduced productivity caused by illness (presenteeism). Drinkers do not only generate productivity losses when feeling too ill to go to their work (absenteeism), but also when they suffer the consequences from drinking and still go to their work; they are then less efficient while at work (presenteeism). A survey undertaken in 2004 by reed.co.uk suggested that workers turn up at work with a hangover on average two and a half days per year (York_Health_Economics_Consortium, 2010). These workers reported that they were 27% less efficient on these days.

E.1.5 Alcohol-related accidents

This information will have to be taken from the police records for the period 2016-17, and supplemented with the YMA etc. records.

E.1.6 Domestic violence

This information will have to be obtained from appropriate authority for the said period. These records will have to be converted into numeracies as far as possible.

E.1.7 Loss of quality of life

QALY losses associated with illnesses caused by alcohol consumption will have to be estimated, if possible, from National Sample Survey.

E.2. Production and distribution of alcohol

The consumption of alcohol generates not only effects for consumers, but also has implications for producers and distribution channels (bars, shops etc.). Alcohol production results in employment (wages), rent for premises, interest on capital, and may generate profit for entrepreneurs. Often, generic data for all activities, including those not related to alcohol, are available. Here, sales data and organisational overheads will have to be obtained from the Aizawl vendor shops and bar.

E.3 Taxes and duties

This information may be obtained from Taxation and Excise Department for the period of study.

E. 4 Healthcare

A large number of diseases is associated with consumption of alcohol. However, the strength of evidence on this relationship differs for each disease. The relationship between alcohol consumption and occurrence of diseases is twofold. Some diseases may be caused by alcohol; others may be prevented by alcohol. For a number of diseases, it is known that moderate use of alcohol is associated with a reduced risk of disease, when compared with no consumption f alcohol at all. Such moderate consumption prevents the occurrence of coronary heart diseases (CHD), stroke, diabetes mellitus type 2 and dementia (Gezondheidsraad, 2015a). On the other hand, high levels of alcohol intake lead to an increased risk of stroke, colon cancer and breast cancer (Gezondheidsraad, 2015a), the Korsakov syndrome (Hersenstichting) and FASD (Popova et al., 2015; Van Wieringen et al., 2010). The risk of CHD increases when there is binge drinking (Gezondheidsraad, 2015a).

Several sources to estimate both healthcare costs and healthcare savings for 2016-17 will be done as follows:

- The number of cases and healthcare costs related to CHD, DM 2 and stroke
- The number of alcohol related cancers is considered from a study by Lanting et al. (Lanting, 2014b). According to this report, from the total number of oral cavity cancer, 36.4% is caused by alcohol. For larynx cancer this is 19.8% and for esophagus cancer 44.1%. From the total occurrence of breast cancer 7.7% is caused by alcohol, for liver cancer this is 17.2% and for colorectal cancer 10.8%.
- The number of patients involved in and associated costs of addiction care, costs of nursing and care, including day time activities. Other sectors are yet to be identified

E.5 Education

E.5.1 Study delay

In order to estimate the annual cost of study delay related to alcohol consumption it is important to know the relative share of alcohol related causes for study delay to all other causes of study delay. It is assumed that an alcohol related cause of study delay will only appear in those students engaging in binge.

E.5.2 School dropout

No quantitative information on the number of school dropouts related to consumption of alcohol is available. School dropout is associated with lifetime restricted earnings, compared to peers who leave school with a diploma. In the absence of data on the quantitative role of alcohol in school dropout, it is impossible to make estimates. This category of costs is therefore represented as Pro Memori costs in the estimates.

E.6 Police, Judicial

Costs of prevention, tracing and justice The financial expenses that are associated with activities of police, legal authorities and other governmental and private organizations involved in

prevention, persecution and detention of crimes are to be obtained from official sources. The calculation will be done by unitising the annual departmental expenditures by number of cases involving alcohol.

E.7 Public Authority (Government)

This mainly comprises of the Excise and Narcotics Department and its estimation will be calculated by unitising departmental expenditures by number of cases involving alcohol. Other costs may also be educational campaigns etc., cost of enforcements.

E.8 Church and Community

This section will attempt to quantify the efforts taken by the Church and NGOs in terms of direct and indirect costs. For calculations of indirect costs, per capita income of Rs. 85,356 for a day i.e. Rs. 233.85 per day per person would be the base of calculation.

E.9 Others in society (victims)

Costs and effects of alcohol use are not only of importance for the consumer of alcohol but also for others in society, such as close relatives of the alcohol users, and people who become victim of alcohol abuse. Quality of life losses in family members of alcohol users, e.g. for those with a family member addicted to alcohol may be attempted for quantification, at least at a hypothetical value. This section may also include fear, anxiety and feelings of social insecurity in the general population that is related to vandalism and violence. Furthermore, there may be psychological damage in victims of accidents and violence. These may be calculated in terms of treatment costs given to those of similar cases.

E.10 Other externalities

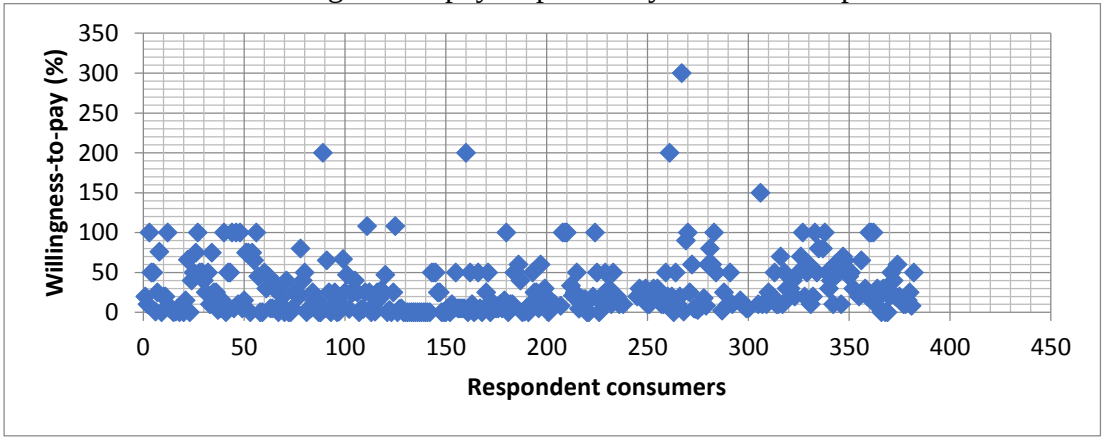
It may be laborious and difficult to quantify such externalities like possible increase in use of hard drugs etc. However, all possible information may be attempted for gathering from Excise & narcotics Department, YMA, MSACS and so on.

1. CONSUMERS

Consumer surplus

For 51,898 card holders' population in Aizawl (valid up to 31st December, 2016), a sample size of 382 was arrived at using standard formula[1]. Random numbers of 328 was generated between serial numbers 1 to 51,898. Card numbers corresponding to the generated serial numbers were extracted and interviewed over telephonic calls.
Of all the 382 sample consumers, 345 of them respond to the inquiry *how much (in %) would they be happily willing to pay for the same drink over and above the present rate they are paying*.
Their responses may be averaged to 30.56% over the present rate they have been paying. That is, if the consumer is paying Rs. 100/- per drink at present, he would still happily pay Rs. 130.56/- for the same drink. Exhibit 1 demonstrates these responses in scatterplot.

Exhibit 1: Willingness-to-pay responses by consumer respondents



Thus, Table 1 considers the calculation of anticipated consumer surplus from the total revenue accounted for during 2016-17.

Table 1: Calculation of anticipated consumer surplus during 2016-17

A	B	(A – B)
Total Revenue	Total Revenue after increase in 30.56%	Consumer Surplus
₹922,535,104	₹1,204,461,831	**₹281,926,728**

The total revenue (A) is based on information given out by Taxation Department, Govt. of Mizoram. Column B indicates total revenue after increase in 30.56%. The difference between A and B would give the anticipated consumer surplus during the period of study i.e. ₹281,926,728. Therefore, consumer surplus derived from consumption of alcohol by drinkers is amounted to approximately ₹2,819 lakhs.

[1] Sample size = $\frac{Z\ sqr\ (p)(1-p)}{C\ sqr.}$ Where, z = 1.96 for 95% confidence level, p= 0.05, c = confidence interval 5%

Accidents

Regarding road/traffic accidents, documented incidences are recorded as shown in Table 2.

Table 2: Traffic accidents on record by authority during 2016-17

Case	Property damaged		Injury	
	Type	Value	Grievous	Minor
1	1. Bike R-15 2. Bajaj Pulsar Bike 3. Royal Enfield Bullet 4. Scooty	₹ 85,000 ₹ 60,000 ₹ 1,00,000 ₹ 40,000		2
2	1. Bike (Hunk) 2. Bolero	₹ 55,000 ₹ 5,50,000	1	1
3	1. Scooty 2. Wagon R	₹ 40,000 ₹ 1,80,000	2	2
4	Undefined		1	
5	Sumo	₹ 2,40,000	1	6
6	Taxi	₹ 2,50,000	1	
Total		**₹1,600,000**	6	11

The record obtained from traffic police could not represent the whole incidence of accidents during the year because it is customary to negotiate and arrive at agreements between parties involved in accidents without filing cases.

Drunken Driving

Table 3 indicates Traffic Police record of fines paid against drunken driving during the period of study.

Table 3: Fines paid due to drunken driving

Month	Cases	Fines imposed (₹)
April-16	73	₹ 146,000.00
May-16	87	₹ 174,000.00
Jun-16	60	₹ 120,000.00
Jul-16	60	₹ 120,000.00
Aug-16	61	₹ 122,000.00
Sep-16	59	₹ 118,000.00
Oct-16	39	₹ 78,000.00
Nov-16	32	₹ 64,000.00
Dec-16	38	₹ 76,000.00
Jan-17	21	₹ 42,000.00
Feb-17	34	₹ 68,000.00
Mar-17	36	₹ 72,000.00
Total	600	**₹ 1,200,000**

It should be noted that at least 80% of all traffic rules violations may be connected with use of alcohol and not all incidences during the year was taken as cases by the authority.

Loss of Productivity

The consumer respondents were asked *how many days in a week do they drink* and *whether their drinking impede their work after drinking.* These two responses are tabulated as below –

Table 4: Day(s) of drinking per week

Drinking day(s) per week	Does your drinking impede your work?			Total
	Never	Sometimes	Often	
One day a week	27	10	0	37
Two days a week	107	17	0	124
Three days a week	116	30	5	151
Four days a week	8	7	0	15
Five days a week	4	5	2	11
Six days a week	4	0	1	5
Every day	25	8	2	35
Total	291	77	10	378

291 of the respondents claimed their drinking never hamper their work. However, 77 of them occasionally (taken as once every ten drinking days i.e. 1/10) had impedance to work after drinking. And, 10 respondents claimed to be often (taken as once every three drinking days i.e. 1/3) impeded to work.
The calculations of productivity loss are seen in Table 5

Table 5: Day(s) of drinking per week

Day(s) of drinking per week	A	B	C	D	E	F
	Weeks in a year = 52	*Sometimes*	*Often*	(B+C)	*Days lost for 378 respondents*	*Days lost for total consumers*
		Nos.*1/10	Nos. *1/3			
One day a week	1 x 52 = 52	1	0	1	52	For 378 consumers, days lost is 2015.16. For total 51,898 consumers, days lost would be: 2015.16 * 51898÷378
Two days a week	2 x 52 = 104	1.7	0	1.7	176.8	
Three days a week	3 x 52 = 156	3	1.67	4.67	728.52	
Four days a week	4 x 52 = 208	.7	0	.7	145.6	
Five days a week	5 x 52 = 260	.5	.67	1.67	434.2	
Six days a week	6 x 52 = 312	0	.33	.33	102.96	
Every day	7 x 52 = 364	.8	.67	1.47	535.08	
Total days lost					2,015.16	2,76,674
Per capita income per day = ₹ 342.76						
Productivity loss by 51,898 consumers for 2,76,674 days @ ₹342.76 may be speculated at **₹94,832,780**						

Therefore, estimated productivity loss during 2016-17 due to alcohol may be derived to the amount of ₹ 948.34 lakhs.

Unavailability for labor market

Both Police department and Excise & Narcotics department maintain separate records of arrests and cases under violation of MLPC Act. The inquiry assumes the period of

detention for those cases registered under the Act for calculation of unavailability for labor market (a sub-set of productivity loss). The Act maintains minimum 1 month (taken as 30 days) detention for drunken cases and minimum 6 months (taken as 180 days) in case of illegal possession and sales.

Cases filed by Police department under MLPC Act during the year 2016-17 and productivity loss due to unavailability for labor market are shown in Table 6 as below.

Table 6: Cases filed by Police Department under MLPC Act during 2016-17

	A	B	C	D	E	F
Month	No. of drunk cases	Days Lost (A * 30 days)	Productivity loss (B*₹342.76)	No. of possession & sale cases	Days Lost (D * 180 days)	Productivity loss (F*₹342.76)
Apr-16	63	1890	6,47,816	1	180	61,697
May-16	48	1440	4,93,574	5	900	3,08,484
Jun-16	46	1380	4,73,009	1	180	61,697
Jul-16	168	5040	17,27,510	2	360	1,23,394
Aug-16	84	2520	8,63,755	3	540	1,85,090
Sep-16	55	1650	5,65,554	3	540	1,85,090
Oct-16	61	1830	6,27,251	3	540	1,85,090
Nov-16	37	1110	3,80,464	3	540	1,85,090
Dec-16	77	2310	7,91,776	4	720	2,46,787
Jan-17	57	1710	5,86,120	1	180	61,697
Feb-17	53	1590	5,44,988	-	-	-
Mar-17	-	-	-	-	-	-
Total	749	22,470	₹77,01,817	26	4,680	₹16,04,117
Per capita income per day = ₹ 342.76						
Unavailability for labour market 27,150 days during 2016-17 @ ₹342.76 may be speculated at **₹9,305,934**						

As for the cases filed by Excise and Narcotics Department under MLPC Act during the year 2016-17 and productivity loss due to unavailability for labor market, the variables are shown in Table 7 as below.

Table 7: Cases filed by Excise Department under MLPC Act during 2016-17

	A	B	C	D	E	F
Month	**No. of drunk cases**	**Days Lost (A * 30 days)**	**Productivity loss (B*₹342.76)**	**No. of possession & sale cases**	**Day Lost (D * 180 days)**	**Productivity loss (F*₹342.76)**
Apr-16	27	810	2,77,636	27	4860	16,65,814
May-16	23	690	2,36,504	27	4860	16,65,814
Jun-16	5	150	51,414	21	3780	12,95,633
Jul-16	46	1380	4,73,009	27	4860	16,65,814
Aug-16	45	1350	4,62,726	31	5580	19,12,601
Sep-16	21	630	2,15,939	23	4140	14,19,026
Oct-16	26	780	2,67,353	37	6660	22,82,782
Nov-16	25	750	2,57,070	29	5220	17,89,207
Dec-16	32	960	3,29,050	16	2880	9,87,149
Jan-17	20	600	2,05,656	14	2520	8,63,755
Feb-17	8	240	82,262	15	2700	9,25,452
Mar-17	2	60	20,566	13	2340	8,02,058
Total	280	8,400	28,79,184	280	50,400	₹172,75,104
Total Number of Days Lost (8,400+50,400) = 58,800 days						
Per capita income per day = ₹ 342.76						
Unavailability for labour market 58,800 days during 2016-17 @ ₹342.76 may be speculated at **₹20,154,288**						

Effects on quality of life

Attempt to quantify the effect of alcohol on quality of life was made taking into consideration *only* the recorded emergency cases at Casualty, Aizawl Civil Hospital in this study due to limitations of time and data resources.

It may be conservatively assumed on average that, those persons involved in accidents may be unable to work effectively for at least 3 days, thus hampering their quality of life for those days.

From the data generated by Aizawl Civil Hospital MIS, the number of days affected by alcohol related accidents and its indicative costs are demonstrated in Table 8.

Table 8: Days affected by alcohol related accidents

Month	Emergency cases at Aizawl Civil Hospital Casualty			Days affected (Cases*3 days)
	Male	Female	Total	
April '16	495	340	835	2505
May '16	926	626	1552	4656
June '16	795	485	1280	3840
July '16	594	395	989	2967
Aug '16	1337	935	2271	6813
Sept '16	1310	874	2183	6549
Oct '16	1327	818	2145	6435
Nov '16	1237	814	2051	6153
Dec '16	1544	1017	2561	7683
Jan '17	1398	862	2260	6780
Feb '17	1501	1013	2514	7542
Mar '17	1673	1094	2767	8301
Total	14136	9272	23408	70224
Per capita income per day = ₹ 342.76				
Days affected by alcohol related emergency cases 70,224 days during 2016-17 @ ₹342.76 may be speculated at **₹24,069,978**				

Premature death

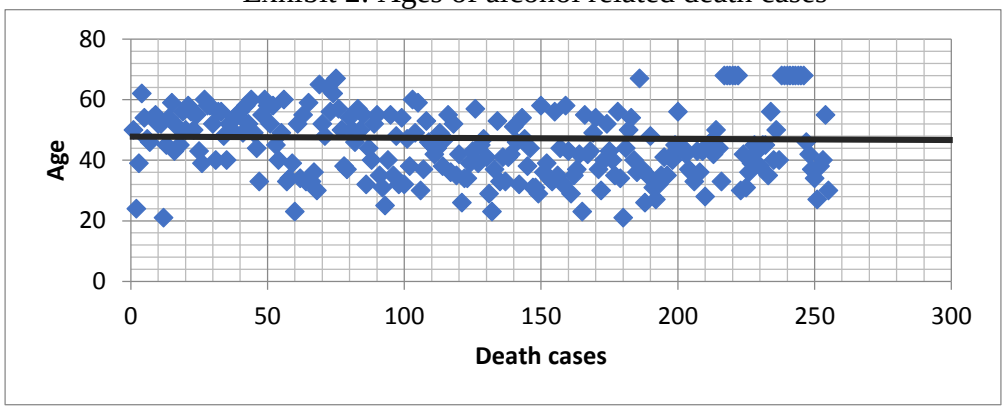
Mizoram Synod Social Front SF Booklet No. 49 indicates 23.38% of deaths recorded in four major hospitals during 2016 within Aizawl as attributable to alcohol.

The present study independently attempts to proportionate deaths attributable to alcohol from total death recorded under Registrar of Births & Deaths, Economic & Statistics Department during the period of study. 1334 deaths were recorded under Medical Certification of Cause of Death (MCCD), of which 253 deaths could be identified with ICD-10 alcohol related disease codes.[2] Therefore, around 19% of deaths may be attributed to alcohol.

As documented by the authority, 1796 male and 988 female deaths, i.e. a total of 2734 deaths occurred within urban Aizawl during 2016. Among these occurrences, 2269 are residents of urban Aizawl. Thus, it may be assumed that 431 deaths may be attributed to alcohol during 2016-17 within urban Aizawl. The distribution of alcohol related deaths across different ages can be observed in Exhibit 2.

[2] Please refer https://nccd.cdc.gov/dph_ardi/Info/ICDCodes.aspx for ICD-10 Alcohol Related Disease Codes

Exhibit 2: Ages of alcohol related death cases



The line running between age 40 and 50 denotes death cases related to alcohol is averaged at 45 years.
As for the calculation of cost of death, the following formula is used:

$$\frac{P}{(r-g)}\left[1-\left(\frac{1+g}{1+r}\right)^{n}\right]$$

Where,
P = Per capita income (2016-17); *r* = Inflation rate (urban);
g = Expected growth rate; *n* = no. of years expected to live.

Per capita income is taken as ₹125,107,
r = Inflation rate at an average of 7%,
g = growth rate at 12.46%,
n = 68 years (life expectancy in India) - age at time of death.

For example:
Death at of age 50 (say) would cost ₹3,199,555. This amount is derived from the following calculation as follows –

$$\frac{P}{(r-g)}\left[1-\left(\frac{1+g}{1+r}\right)^{n}\right]$$

$$= \frac{125107}{.07-.1246}\left[1-\left(\frac{1+.1246}{1+.07}\right)^{18}\right]$$

= -2291337 x -1.4482
= ₹3,318,314

Likewise, cost of premature death for 253 alcohol related cases is calculated at ₹1,510,324,014. Therefore, the speculative amount for premature cost of death to the scale of 431 alcohol related deaths is shown in Table 9.

Table 9: Speculative premature cost of death in 2016-17

Source	Death cases	Alcohol related deaths (19%)	Premature cost of death
MCCD listed	1334	253	₹1,510,324,014
Urban Aizawl list	2269	431	**₹2,572,923,518**

2. RETAIL

At present, there are 20 liquor outlets operating in Aizawl and the sales inflow amount to ₹922,535,104 during the period of study from these outlets. The distribution is provided in Table 10.

Table 10: Total sales of alcohol in Aizawl during 2016-17

Name of zones	Amount (₹)
Aizawl North	₹ 21,391,904
Aizawl South	₹ 726,636,822
Aizawl Central	₹ 174,506,378
Total sales	₹ 922,535,104

Of the quantum amount of sales, 10% and 15.5% from basic price was fixed as profit margin for bonded warehouse and retail vendor shops respectively vide notification no. G.20011/1/2014-EXC/Pt dated 27th February, 2015.[3]

Table 11 indicates the profit earnings of bonded warehouses and retail vendor shops during the year.

Table 11: Profit earnings of warehouses and retail outlets

Warehouse Profit (10% of Sales Revenue)	Operating Profit for Vendor (15.5% of sales revenue)	Total Profit
₹92,253,510	₹142,992,941	**₹235,246,451**

It is worth noting that an average of 76 employments was created at the retail outlets in Aizawl during 2016-17 and an approximation of ₹5,017 was given as salary to these employees per month. Thus, salary paid to these 76 employees amount to ₹4,601,000 and is a part of the operating profit of retail vendors. Employees of those retail shops owned by the government are not accounted for in the cited figure.

[3] The original margin for retail vendors in the notification was 18%. However, this rate was revised to 15.5%.

3. TAXES AND DUTIES

From the social point of view, taxes and subsidies are nothing but transfer payments. However, in the present study, taxes & duties earned by the State are treated as monetary benefits. Two incidences of State earnings may be allocated as Value Added Tax (VAT) and Excise duty (ad valorem)

Value Added Tax (VAT)

The prevailing rate of Value Added Tax (VAT) for alcohol is 13.5%. A total of ₹124,542,239 was collected by Taxation Department as VAT. Table 12 shows the total VAT collected during 2016-17 within Aizawl (zone-wise)

Table 12: VAT collection during the year in Aizawl

	North Aizawl	Central Aizawl	South Aizawl	Total
VAT collected	₹2,887,907	₹23,558,361	₹98,095,971	**₹124,542,239**

Excise Duty

The Excise and Narcotics Department, Govt. of Mizoram notification no. G. 20011/1/2014 – EXC dated 3rd February, 2015 defines excise duties for different classes of Indian Made Foreign Liqour (IMFL). Quarter-wise collection of excise duty within Aizawl during the year may be seen in Table 13.

Table 13: Excise duty collected within Aizawl

Quarters	Total
April-June 2016	₹97,841,195
July-September 2016	₹99,998,365
October - December 2016	₹117,306,513
January-March 2017	₹93,996,609
Total	**₹409,142,682**

4. HEALTH COST

An attempt was made to quantify health cost relating to alcohol. For the present study, trauma cases and hospital visitations are quantified accordingly.

Trauma/injury/accidents

Of all the 57,418 emergency cases recorded by the Civil Hospital MIS during 2016-17, 31210 incidences are registered injury/trauma cases. Of these trauma cases, a conservative 75% of all incidences may be attributable to alcohol usage.[4] Estimation of trauma cases relating to alcohol may be calculated as follows.

Table 14: Trauma/emergency cases recorded in Aizawl Civil Hospital

Month	Trauma emergency cases			Estimated alcohol related cases (75% of all cases)
	Male	Female	Total	
April '16	660	453	1113	835
May '16	1235	834	2069	1552
June '16	1060	647	1707	1280
July '16	792	527	1319	989
Aug '16	1782	1246	3028	2271
Sept '16	1746	1165	2911	2183
Oct '16	1769	1091	2860	2145
Nov '16	1649	1085	2734	2051
Dec '16	2059	1356	3415	2561
Jan '17	1864	1149	3013	2260
Feb '17	2001	1351	3352	2514
Mar '17	2231	1458	3689	2767
Total	18848	12362	31210	23408

Cost of medical attention provided to trauma patients at Aizawl Civil Hospital during the period 2015-2016 can range from ₹1,17,04,000 (basic first aid@ Rs. 500 per case) at the minimum to ₹70,224,000 (intensive care involving radiology investigations @ ₹3000 per case) at the maximum.

Therefore, taking the average of these two figures, an approximation of **₹40,964,000** may be allocated as expenditure during the year for treatment of alcohol related trauma/injury cases in Aizawl Civil Hospital.

It should be noted that other hospitals are not taken into account for the study as records are not maintained to suit the study.

[4] This estimate is given by the medical officer on duty at Casualty for the past three years, Dr. Lalthankimi Ralte. She quotes that of all the accidents and injuries bought to Casualty, at least 75% of them happened due to use of alcohol.

Health Care

The study sampled 3508 patient cases at 13 hospitals within Aizawl during the span of 2 months (average), of which 680 of them are identified as alcohol related ailments. The treatment cost of these cases was approximated as per Government Notification No.A.17014/7/07-HFW dated 22nd July, 2008 may be noted as follows.

Table 15: Estimation of health cost for alcohol related ailments

Duration	N	Alcohol related cases	Cost estimated
2 months	3508	680	₹5,724,050
For 1 year	21040	4080	**₹34,344,300**

Since the cost of treatment rates were based on 2008 figures, accounting for average inflation of 7% would give the present value of the indicative cost of treatment as follows:

$$PV = FV [1/(1+i)^n]$$

Where,

PV = ₹5,724,050

i = 7% inflation rate

n = 9 years (i.e. 2008 to 2017)

Therefore,

$$5,724,050 = FV [1/(1+7\%)^9]$$

FV = **₹63,536,955**

5. POLICE, JUSTICE

Police effort

Relevant information was sought out from the Aizawl Superintendent of Police regarding the expenditures incurred by the police stations in Aizawl, inclusive of salary and administrative expenses. Out of 1,307 cases registered during the period under study, 457 cases were filed under the MLPC Act.[5] Thus, 34.97% of operating expenditure incurred by police station could be police efforts attributed to alcohol-related cases.

The following Table 16 shows the information thus collected. In order to estimate the cost attributable to alcohol, the proportion of cases registered under the MLPC Act was used as the basis of estimation.

Table 16: Operating expenses of police stations in Aizawl

Expenses	Amount (₹)
Salary	103,428,084
Rent	-
Electricity charges	306,960
Water bill	31,656
POL	52,134
Total	103,818,834
Amount attributed as police efforts attributed to alcohol-related cases (34.97% of total expenses)	**₹36,300,847**

Judicial Cost

Assuming the cost of trial at ₹20,000 per case,[6] the total cost of judicial remedy for all the 1335 persons arrested (Police and Excise) during 2016-17 is estimated to be ₹ 15,500,000.

Table 17: Judicial costs for MLPC arrests

Department	Number of persons arrested	Judicial cost @ ₹20,000 per trail
Police	775	15,500,000
Excise	560	11,200,000
Total	1335	**₹26,700,000**

Detention cost

The total annual expenditure on jails was ₹641.75 lakhs as per Mizoram Economic Survey 2016-17. It was recorded that 15,753 in-mates were serving time as per record across the State. Thus, the annual expenditure per inmate is arrived at ₹4,074. Taking this per capita expenditure as the base rate, the total annual expenditure for the year 2016-17 is estimated as follows

[5] Note that the ratio is calculated using cases registered under MLPC Act, not persons arrested. The study did not obtain total arrests made during the year and thus, ratio for arrests cannot be calculated.

[6] Cost of attorney would range between ₹10,000 to ₹30,000

Table 18: Detention cost

Department	Arrests[7]	Total	Calculation
Police	775	1335	u/s 43(1) 1 month @ 2/3*1335*₹340
Excise	560		u/s 43 (2) 6 months @ 1/3*1335*₹2037
Total detention cost			**₹1,209,065**

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[7] Here number of arrests (not cases) is accounted for as one detainee may have more than one case i.e. section 43(1) and 43(2) of MLPC Act.

6. PUBLIC AUTHORITY

Enforcement and control

Total cases registered by Excise and Narcotic Department during 2016-17 were 2,096. Of these cases, 1,714 cases (82%) were registered under MLPC Act and the rest 382 cases (18%) were registered under NDPS Act. Total number of persons arrested under MLPC Act was 1,417 (75%) and 485 (25%) persons under NDPS Act for the same year. Cost allocation for enforcement and control exercised by Excise and Narcotic Department may be arrived at as follows.

Table 17a: Total cost of enforcement and control for alcohol within Mizoram

Total cost of enforcement and control	Cost attributable to alcohol	Cost attributable to other substances
₹ 311,568,000	₹233,676,000	77,892,000
Percentage	75%	25%

Thus, total cost of enforcement and control attributable to alcohol was amounted to ₹233,676,000 for the whole of Mizoram State. However, the scope of study is Aizawl City, and the cost of enforcement and control of alcohol attributable to Aizawl city will be calculated as under:

Total number of persons arrested under MLPC Act in Mizoram during 2016-17 was 1,417. Of those, 560 persons (39.52%) were arrests made within Aizawl city and the rest 857 cases (60.48%) outside Aizawl. Following table shows allocation of cost of enforcement and control within Aizawl during 2016-17:

Table 17b: Cost of enforcement and control of alcohol in Aizawl

Total cost of enforcement and control for alcohol	Total cost of enforcement and control for alcohol within Aizawl	Total cost of enforcement and control for alcohol in other parts of Mizoram
₹ 233,676,000	**₹ 92,348,755**	₹ 141,327,245
Percentage	**39.52%**	60.48%

Thus, during the year 2016-17, total cost of enforcement and control within Aizawl can be speculated at **₹92,348,755**

7. CHURCH AND COMMUNITY

Effort made by church

The following table depicts the cost of effort made by the church towards management of alcoholism.

Table 18: Cost of effort made by the churches in Aizawl 2016-2017

Denomination	Total Number of camping		Special camping for Alcoholic Dependents		
	Number	Total expenses (₹)	Number	Proportion attributed to Alcohol	Expenses (₹)
Presbyterian Church of Mizoram	61	78,62,778	(Assumed)		
-Synod Camping Centre	11	14,17,878	11	95%	13,46,984
-Local Church Campings	50	64,44,900	50	50%	32,22,450
Seventh Day Adventist	14	3,30,000		50%	1,65,000
The Salvation Army	35	22,65,000		50%	11,32,500
United Pentecostal Church	37	25,98,000		50%	12,99,000
Roman Catholic Church	2	1,61,000		50%	80,500
TOTAL	149	13,216,778			**₹7,246,434**

Except for the proportion explicitly stated for the Synod Camping Centre, the proportion of alcohol-related admitted cases at each of the camping has been conservatively estimated to be 50%. Using this estimate, the total expenditure on camping etc. accounted for alcohol-related cases may be arrived at ₹ 7,246,434 during the year 2016-2017.

YMA, etc.

No available data as cooperation CYMA regret to help in getting information from their local branches. However, efforts made by the local YMA branches cannot be ignored in their contributions towards maintaining peace and order in their respective vicinity.

8. OTHERS IN SOCIETY

The present study acknowledges that alcohol affects not only its consumers but also non-users in the society. The worst affected are the family members of alcohol abusers, who often suffer domestic abuse, threats, emotional stress etc. from their alcoholic relatives. However, these are not quantified as *numeraire* for the present study.

Alcohol-induced Domestic Violence

The Universal Women's Helpline set up by the Social Welfare Department of the Govt. of Mizoram offers refuge for domestic violence victims. During the period of study, as shown in Table 19a, the majority of the clients (52%) were between the ages of 21 to 40 years old, while 2% were infants and children below 10 years of age.

Table 19a: Universal Women's Helpline age distribution of clients

Age Group	0-10	11-20	21-40	41-60	61 & above	Unspecified
Percentage (%)	2	18	52	25	1	2

Regarding the marital status of the clients, 48% were married while 40% were either divorced or single, as shown in Table 19b.

Table 19b: Universal Women's Helpline marital status of clients

Marital Status	Married	Divorced/Single	Widowed	Live-In Partners	Re-married
Percentage (%)	48	40	8	3	1

Table 19b gives the breakup of calls received and cases registered by the Helpline. The majority of cases received by the Universal Women's Helpline (67%) were reported by the clients directly and the rest 33% were reported on behalf of the clients. During the period July 2016 to March 2017, a total of 812 calls were registered by them. The calls were regarding problems on the domestic as well non-domestic front and also involve information inquiries.

Table 19c: Universal Women's Helpline 2016-17 Calls and Cases Received

Quarter	July – Sept 2016	Oct – Dec 2016	Jan – Mar 2017	Total
Total number of calls received	193	397	222	812
Total number of cases received	27	63	56	146
Total calls attributable to alcohol	97	199	111	406
Total cases attributable to alcohol	14	32	28	74

Out of all the calls and cases received, domestic violence 45% of the clients (i.e. 183 clients) faced domestic violence issues (including physical, verbal, financial and sexual abuse). And 38% of the clients (ie 154 clients) also faced non-domestic issues (threat, accusation, defamation, sexual harassment, cyber abuse, assault, stalking, eve-teasing etc.).

Friction in the family

The consumer respondents were asked whether alcohol causes friction in their family. Table 20 shows the responses.

Table 20: Alcohol causes friction in the family

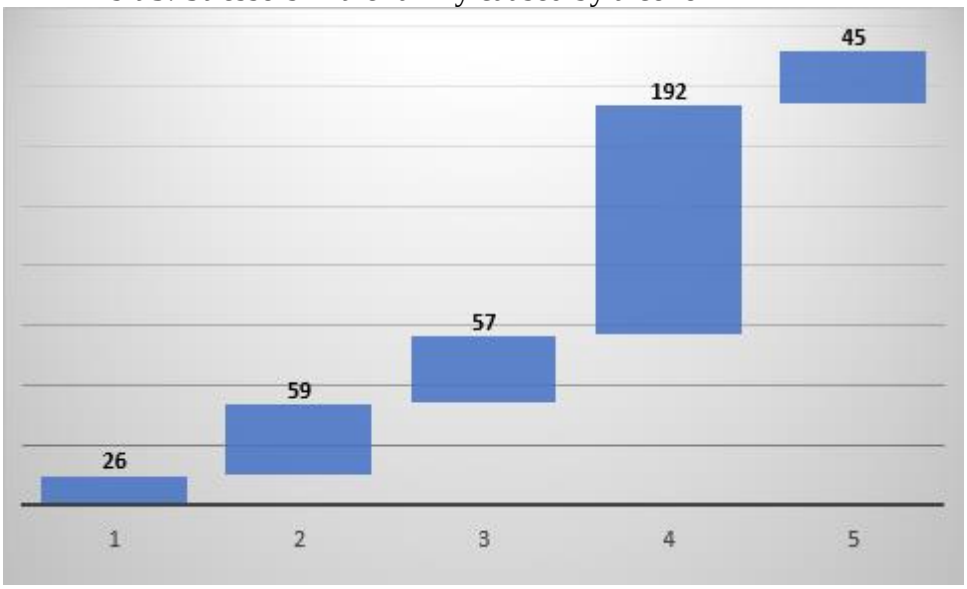
Responses	Frequency	Percent
Alcohol do not cause friction in the family	90	23.5
Alcohol causes friction in the family	232	60.7
No opinion	60	15.8
Total	382	100

While almost 50% of alcohol consumers agree that alcohol causes friction in their family, an additional 11% *strongly agree* to the statement. Thus, more than 60% of alcohol consumers in Aizawl accepted that alcohol causes friction in their domestic life.

Stress of relatives

\ The consumer respondents were asked whether alcohol causes stress to their immediate relatives. The responses were gauged on level of stress/frustration borne by family members, with 5 being the highest degree of stress.

Exhibit 3: Stressors in the family caused by alcohol



Healthcare cost of non-users of alcohol

No data available

Productivity loss of non-users of alcohol

The study also attempted to quantify the value of productive time/days lost by non-users of alcohol. Due to time and resource constraints, the various groups of non-users of alcohol could not be thoroughly studied, and only the productivity losses suffered by attendant relatives of alcoholic patients have been singled out for the study. Only the data recorded by the Aizawl Civil Hospital MIS have been used for the study due to time and data resource limitations.

The study conservatively assumed that each of the alcoholic patients would be accompanied by only one attendant relative. Table 22 shows the estimation of the value of productivity loss suffered by the attendant relatives within Aizawl during the period of study, i.e. 2016-2017.

Table 22: Productivity loss of attendant relatives of alcoholic patients during 2016-2017

Alcoholic patients admitted during 2016-17	Attendant close relative	Number of days lost (assuming an average of 10 days)	Productivity loss of attendant relatives (Days*per capita income @ ₹342.76)
331	331	3310	₹ 1,134,536
Alcohol related OPD patients *	Attendant close relative	Number of days lost (assuming an average of 1 day)	Productivity loss of attendant relatives (Days*per capita income @ ₹342.76)
4080	4080	4080	₹ 1,398,461
Total loss		7390 days	**₹2,532,996**

*See Table 15.

During 2016-17, there were a total of 331 alcoholic patients admitted into Kulikawn Hospital and another 4080 (estimated) OPD alcohol related patients visited other hospitals during the same period. Based on estimates of doctors on duty, admitted patients spent an average of 10 days in the hospital while OPD patients and their attendant relatives loses 1 productive day by coming to the Hospital.

Thus, the total number of productive days lost by all attendant relatives of all alcohol related patients during 2016-2017 is estimated to be 7390 days. Taking the daily per capita income as ₹342.76, the value of productive days lost by the attendant relatives of alcohol related patients during the study period 2016-2017 is calculated to be ₹2,532,996.

9. OTHER EXTERNALITIES

The effect of alcohol and its consumption can also be seen in other areas not mentioned in the above analyses. These factors have been clubbed under this head.

Commercial Sex Workers

One important externality where alcohol has a profound influence is the commercial sex industry. As such, to study the effect of alcohol on the industry, personal communication was established with a total of 26 commercial sex workers within Aizawl city and the respondents were asked several questions with respect to the involvement of alcohol in their trade. The youngest was 21 years old while the oldest was 51 years old and their experiences ranged from 3 months to 24 years. The fees charged by the commercial sex workers interviewed ranged from ₹750 to ₹2,000.

More than sixty percent (61.50%) of the respondents believed that their clientele increased after the legal sale of alcohol while 15.40% did not believe so. The rest 23.10% had no opinion on the matter. All the commercial sex workers contacted were asked to give their opinion on the importance of alcohol in their trade, and more than 80% agreed that alcohol is important for their trade. Only 3.8% disagreed with their peers while 15.54% of them had no opinion on the matter.

One of the most noteworthy findings of this present study is that more than half (at 57.7%) of the commercial sex workers interviewed felt that alcohol was important for their trade. Further, when the respondents were individually asked to estimate how many clients they would lose without the involvement of alcohol, their responses ranged from 27% to 70%. This means that on an average, they would lose 27% of their clients if alcohol was not involved.

Table 23: Effects of alcohol in commercial sex industry

Particulars	Minimum	Maximum	Average
A. Client per night	1	6	2
B. Rate per client	₹ 750	₹ 2,000	₹ 1,135
Total number of working days, assuming 6 days per week (52 weeks x 6)			*312*
C. Number of clients during the year (312 days x A)	312	1,872	1,092
D. Annual Income (B x C)	₹ 2,34,000	₹37,44,000	₹19,89,000
Average Percentage of client lost if alcohol is not involved			*27%*
Unsocial activity due to use of alcohol (D x 27%)	₹ 63,180	₹10,10,880	₹5,37,030
If number of CSWs is scaled upto 300			**₹6,444,360**

From the above table 23, it can be said that if alcohol is not involved in the commercial sex industry, at an average ₹537,030 is attributable to alcohol in commercial sex trade. This value is calculated for only 25 CSWs. The total population of CSWs within Aizawl is not known by the study. If the number of CSWs is scaled upto 300 actives, the amount may be estimated to the level of ₹6,444,360.

SUMMATION OF SOCIAL COST BENEFIT

Sectors	Costs		Benefits	
Consumers	Accidents	1,600,000	Consumer surplus	281,926,728
	Fines from drunken driving	1,200,000		
	Loss of Productivity	94,832,780		
	Unavailability for labor market	29,460,222		
	Effects on quality of life	24,069,978		
	Premature death	2,572,923,518		
Retail			Profit	235,246,451
Tax and duties			Tax	124,542,239
			Duties	409,142,682
Health cost	Trauma/injury/accidents	40,964,000		
	Health care	63,536,955		
Police and Justice	Police effort	36,300,847	Fines from drunken driving	1,200,000
	Judicial Cost	26,700,000		
	Detention cost	1,209,065		
Public authority	Excise effort	92,348,755		
Church and community	Church effort	7,246,434		
Others in society	Productivity loss of non-users	2,532,996		
Other externalities	CSWs (social evil committed)	(6,444,360)*		
Total		**2,994,925,550**		**1,052,058,100**
Ratio		**2.85**		**1**

*not added in calculation

Quantifications may be treated as indicative and not absolute values

The cost arrived hereof is the most conservative calculation. It may be noted that many dimensions of costs are unaccounted due to limitations of time, data and resources.

INDICATION OF MLPC IMPLIMENTATION

Variable 1: Excise duty collected in Aizawl during 2016-17

Months	Quarters	Duty collected
Apr-16	1	31,187,729
May-16	1	34,801,039
Jun-16	1	31,852,427
Jul-16	2	30,870,708
Aug-16	2	36,215,691
Sep-16	2	32,911,966
Oct-16	3	32,362,805
Nov-16	3	35,775,590
Dec-16	3	49,168,118
Jan-17	4	29,487,226
Feb-17	4	31,040,323
Mar-17	4	33,469,060

Variable 2: Valid card holders

Quarter	Valid card holders	Remark
Up to end of 3rd quarter	51,898 (Aizawl)	Validity of cards expired on 31st December 2016
End of 4th quarter	16,641 (Aizawl)	

Research question: *Is there any significant difference between excise duties collected between quarters of the year, given the decrease of 35257 valid card holders in 4th quarter?*

Calculation of ANOVA shows an *insignificant difference* (p value .284 which is >.05) of excise duties collected across each quarters in spite of a very significant decrease in valid cards during 4th quarter of 2016-17. The calculation is shown as follows:

Excise duty collected

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10643979300000.000	3	35479930990000.000	1.511	.284
Within Groups	18781121670000.000	8	23476402090000.000		
Total	29425100970000.000	11			

Quarter-wise comparison may be seen in the following post-hoc test:

Multiple Comparisons

Dependent Variable: Excise duty collected

(I) Quarter	(J) Quarter	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1st quarter	2nd quarter	-719056.66670	3956126.22700	.998	-13387965.4200	11949852.0900
	3rd quarter	-6488439.33300	3956126.22700	.411	-19157348.0900	6180469.4210
	4th quarter	1281528.66700	3956126.22700	.987	-11387380.0900	13950437.4200
2nd quarter	1st quarter	719056.66670	3956126.22700	.998	-11949852.0900	13387965.4200
	3rd quarter	-5769382.66700	3956126.22700	.502	-18438291.4200	6899526.0880
	4th quarter	2000585.33300	3956126.22700	.955	-10668323.4200	14669494.0900
3rd quarter	1st quarter	6488439.33300	3956126.22700	.411	-6180469.4210	19157348.0900
	2nd quarter	5769382.66700	3956126.22700	.502	-6899526.0880	18438291.4200
	4th quarter	7769968.00000	3956126.22700	.277	-4898940.7550	20438876.7500
4th quarter	1st quarter	-1281528.66700	3956126.22700	.987	-13950437.4200	11387380.0900
	2nd quarter	-2000585.33300	3956126.22700	.955	-14669494.0900	10668323.4200
	3rd quarter	-7769968.00000	3956126.22700	.277	-20438876.7500	4898940.7550

Note that in all quarter-wise comparison, p value is always greater than 0.05, indicating insignificant difference in each comparison.

RECOMMENDATIONS AND SUGGESTIONS

The following suggestions and recommendations are made by the MLPC Study Group in consultation with Prof. Vivek Benegal, Centre for De-addiction Medicine, Department of Psychiatry, National Institute of Mental Health and Neurosciences (NIMHANS), Bangalore and Prof. NVR Jyoti Kumar, Dean of SEMIS, Mizoram University.

It should be noted that the MLPC Study Group is constituted to study the socio-economic impacts and to evaluate the effects of MLPC Act, 2014. However, in absence of data prior to promulgation of MLPC Act, 2014, the data collected under the present study, especially the health sector, cannot be solely attributed to the effects of MLPC per se. It should be placed on record that only two years have passed since the application of MLPC Act and thus, is too soon to arrive empirically at any trend, be it favorable or not regarding the MLPC.

While the ultimate goal to do away with the menace of alcohol abuse all along is total abstinence of the substance (alcohol drinks), and with the practical issues to achieve the goal from the past (MLTP) and present (MLPC) experiences so far, the following three options are now open for consideration:

Option 1: Total Prohibition

Considering the social benefit: cost ratio of 1: 2.85, total prohibition is not an illogical option to curb the cascading social costs over social benefits derived from alcohol policy. However, full commitment from the government, health sector, NGOs and Churches would be a very crucial denominator for such decision. It should be noted that total prohibition can emanate adverse effects like bootlegging, disparity of law between economic and social classes etc. Also under prohibition, legal sale of alcohol will be proscribed and thus, the state's revenue in form of tax and ad valorem will have to be forgone.

Option 2: Partial/Controlled Prohibition

The other option would be partial prohibition incorporating recommendations by eminent experts in consultation.

Demand reduction

A. *Health sector interventions*

Looking at the costs column, it is immediately apparent that the health costs are significantly high. Alcohol control measures which target health are most often the ones most acceptable and understandable to communities. Unfortunately, these measures are least resorted to by policymakers and change advocates, and more tragically least practiced by health providers and health systems, partly because the discourse around alcohol control is traditionally so entrenched in moral and legal imperatives.

i. Early detection and brief intervention of alcohol related health problems beginning at primary health care levels. People with early problems due to alcohol first approach primary health care providers long before (on average 11 years) they approach specialist doctors or psychiatrists for alcohol dependence. The Screening, Brief Intervention and Referral to Treatment models involve training primary healthcare personnel in asking few brief questions to screen for

harmful use of alcohol, and deliver brief advice and personalised intervention to reduce or stop alcohol use. People who fail to respond are then referred for more specialised care. There is a wealth of evidence to show that this is effective in reducing harms due to alcohol in communities. This requires sensitisation and training of primary care practitioners as well as developing a stepped care model of care for alcohol use disorders.

ii. Delaying first use: Fixing a culturally appropriate but scientifically informed drinking age cut-off. There is evidence globally as well as in India to demonstrate that delaying age at onset of drinking to at least after 21 years reduces the risk of alcohol use disorders.

iii. Industrial health measures: the data also pinpoints that a major cost involves loss of productivity due to alcohol related absenteeism, inefficiency or injuries.

iv. More attention needs to be paid to the linkages of hazardous/harmful drinking with depression, suicides, especially in the context of young people exposed to social challenges, such as lack of jobs, changed aspirational values etc. Mental health professionals, NGOs and community organisations, social development activists, need to be involved in looking at broad based solutions, which may or may not be directly linked to alcohol use, but are likely to impact wellbeing, values based education, career counselling and other related areas.

B. Legal interventions

i. Strict implementation of drinking driving laws: proper scientific implementation of the drinking and driving prohibitions of the motor vehicles act of India, which involve random breath alcohol checks on highways, culminating in graded penalties leading up to loss of driving license has been found to be an efficient measure of alcohol control elsewhere in India.

ii. Public drunkenness: Measures to fine or prosecute public nuisance due to intoxication as practiced in Mizoram currently are likely to be effective measures for control. This could be tied in with strategies to prevent alcohol related violence in family contexts, with the involvement of some of the effective NGO (YMA) and other community or church based initiatives. Studying the harms to other than the drinker, may be a good way of understanding the felt need in the community and planning further interventions.

Public drunkenness and DWI offenders can potentially suffer graded reductions in allotted beverage quotas (alcohol beverage off-take from permit card) with eventual loss of license for specified periods.

iii. Deviant work behaviours due to alcohol consumption in workplaces should be discouraged and punished. The state government may evolve a policy in this regard. The punishment should range from a written reprimand to termination of the employee who was found in the drunken state in the workplace and who was irregular to his duty.

iv. In tune with such a policy, it is suggested to incorporate necessary changes in the employee performance appraisal system (e.g. including a provision on

deviant work behaviours in the confidential report of an employee, transfer to remote areas)

C. *Sensitization of police and judicial officers*

The discourse around alcohol harm and the individual and community responses are likely to be more effective if they can be reframed as health problems rather than as moral or criminal transgressions. Similar to provisions in the NDPS, alcohol offenders may first be referred to such treatment systems, in lieu of legal sanctions.

D. Community awareness generation with reframing problem in health and economic contexts

The framing of alcohol use problems as moral transgressions promotes stigma around use and defensive attitudes or denial regarding alcohol use disorders, leading to a lack of public discourse around hazardous and harmful drinking and ultimately delayed help seeking.
Side by side, the lack of knowledge of the hazardous drinking limits (moderate drinking guidelines) coupled with the loss of traditional drinking norms and informal social controls is promoting harmful patterns of alcohol tobacco and other drug use, which is disproportionately affecting younger populations, leading to harmful use, binge drinking patterns etc. There is a major need for public health messaging, through a variety of media to address public awareness regarding alcohol misuse and its health and social costs as well as moderate drinking limits and individual vulnerability factors which promote negative health and social outcomes.

Supply reduction (Measures to reduce availability or access)

i. State alcohol supply monopoly – as currently ongoing in Mizoram
ii. Excise Department needs to be strengthened. Almost all of their forces are on duty at vendor shops and insufficient for enforcement within the city.
iii. Rationalization of permit card system and promote more efficient monitoring and enforcement to prevent misuse of the ration cards. The existing card system needs to be reviewed or strengthened. The study found the ineffective implementation of the card system. It is suggested to explore the possibility of issuing smart cards by using information technology to detect the cases misusing the cards.
OR
Scrapping off alcohol card and ration system
iv. Taxation-inflation linked proportional to alcohol content – taxation on alcoholic beverages should be in proportion alcohol content. It should be in the direction of making higher alcohol containing drinks (spirits) much less attractive than

low alcohol drinks such as beers and wines. Taxation should also be linked to inflation and rise of incomes, so that alcohol does not become progressively cheaper to buy.

v. Alcohol advertising and surrogate advertising should be strictly enforced, especially surrogate advertising aimed at youth and women.
vi. Mainstreaming and regulating/standardizing production & sales of traditional low alcohol content homebrews
vii. Properly enforced prevention of illicit production of toxic beverages

Other measures

A. *Institution of alcohol control fund*
The proper authority may consider and take up the creation of a head of funding, for which a proportion of the alcohol excise taxation funds may be ring fenced, so as to allow the regular monitoring of the enforcement of the provisions of the Act. This may be on similar lines that the NDPS Act set up a fund, to run the activities of the Drug De-addiction Programme (DDAP) of the Government of India. Other examples are the alcohol control programmes in the United Kingdom, Scotland, in the USA and in Australia, where alcohol excise, taxation and other similar funds are used to fund on-going alcohol control programmes such as the NIAA and the SAMSHA in the USA

B. *Prohibition study group*
In the light of the above, it is important to have an expert body which is tasked with the periodic review and the medium and long term impact of the prohibition policy. The Body should consist of experts from medical, economic, criminal justice, excise, and civil society members from the media, the churches, etc. The current study provides a meticulous, but cross sectional picture of the situation. Periodic reviews at judicious intervals will provide invaluable data for further policy utilisation as well as provide invaluable data for others in the rest of the country involved in alcohol control.

Option 3: Free Sale

Free-sale of alcohol may also be considered as an option, since control mechanisms and machinery are annulled in practice in both prohibition and partial prohibition.

Appendix – 1

DEMOGRAPHICAL PROFILES OF CONSUMER RESPONDENTS

Age

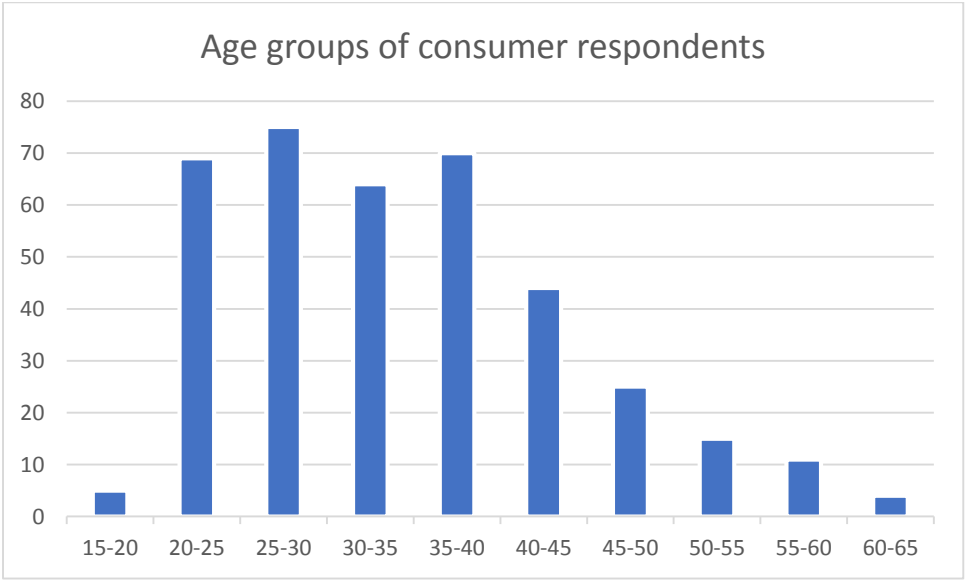
The consumer respondents are categorized in age groups of 5 years interval as follows:

Table 1: Age grouping of the respondents

		Frequency	Percent	Cumulative Percent
Valid	15-20	5	1.3	1.3
	20-25	69	18.1	19.4
	25-30	75	19.6	39.0
	30-35	64	16.8	55.8
	35-40	70	18.3	74.1
	40-45	44	11.5	85.6
	45-50	25	6.5	92.1
	50-55	15	3.9	96.1
	55-60	11	2.9	99.0
	60-65	4	1.0	100.0
	Total	382	100.0	

The table indicates drinking population is highest among 25-30 years. Almost ¾ th of all consumer respondents are below 40 years of age. Graphically, the frequency distribution of respondent consumers may be displayed as under:

Exhibit 1



Other descriptions of the respondent sample consumers are as follows:

- No. of years of active drinking = 14.8 ± 0.97 years
- Age of initiation (first drink) = 20.28 ± 0.47 years
- Average age of the respondents = 35.16 years

Reasons for drinking

Responses to the inquiry for reason attributed to initial drinking is indicated in Table 2.

Table 2: Reasons for initial drinking

		Frequency	Percent	Cumulative Percent
Valid	Friends	102	26.7	26.8
	Movies and films	1	.3	27.1
	Curiosity	220	57.6	85.0
	Other reasons	57	14.9	100.0
	Total	380	99.5	
	No response	2	.5	
	Total	382	100.0	

It may be observed that curiosity to experience of drinking (the getting-high etc. feeling) is the major factor attributing to initial drinking of alcohol among the present consumer respondents.

Friends and relatives as influencing factor for drinking

According to a research-based domain, people with a friend or relative who did not drink were 29% more likely to be teetotallers themselves. Moreover, men whose wives started drinking heavily were three times more likely to start doing so themselves, while a woman whose husband began drinking a lot was only about twice as likely to join him.[8]
However, in the present study, having family members who drink or not do not seem to have influence on the respondents' drinking habit as seen in Table 3.

Table 3: Whether the respondents have drinking relatives

		Frequency	Valid Percent	Cumulative Percent
Valid	No	186	49	49
	Yes	194	51	100
	Total	380	100.0	
	No response	2		
Total		382		

Moreover, having or no relatives involved in drinking did not show any significant difference on their drinking frequency (drinking habit) as shown by t-test (refer Table 4).

Table 4: Comparison between consumers with and without drinking relatives

Variable	t	df	Sig.	Levene's Test
Drinking regularity	1.566	377	.118	.359

It is noteworthy that more than 1/3rd (i.e. 35%) drinks in company of friends. Thus, it may be inferred that social lubrication (drinking with peers and friends) is a significant factor for drinking rather than the 'drinking relative' factor in the present study.

[8] http://www.health.com/alcoholism/social-networks-drinking

Health issues

The study denotes that almost 30% of all respondents have health issues related to drinking as seen in Table 5.

Table 5: Alcohol related health issues

		Frequency	Valid Percent	Cumulative Percent
Valid	No	263	69.8	69.8
	Yes	112	29.7	99.5
	3	2	.5	100.0
	Total	377	100.0	
	No response	5		
Total		382		

The respondent consumers are tabulated against their drinking frequency as follows:

Table 6: Tabulation of drinking frequency with health issues

		Drinking Regularity							
		1	2	3	4	5	6	7	Total
Health Issues	No	27	98	96	9	6	4	22	262
	Yes	9	25	55	6	5	1	13	114
Total		36	123	151	15	11	5	35	376

The correlation between drinking frequency and health issues yield a weak yet significant coefficient of 0.147 with $p<.05$. Thus, it may be concluded that drinking frequency significantly affect the health of consumers. However, 98% of the effect on health issue is largely unknown as only 2% of variance in health issue is contributed by frequency of drinks.

Typical outcome of drinking

The respondents were inquired the typical outcome of their drinking. All consumer respondents gave valid inputs except 4 persons. Their inputs are tabulated as follows:

Table 7: Typical outcome of drinking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Drunk/Sober	60	15.7	15.9	15.9
	Slightly Drunk	131	34.3	34.7	50.5
	Drunk but sane	172	45.0	45.5	96.0
	Very drunk, need help	15	3.9	4.0	100.0
	Total	378	99.0	100.0	
Invalid		4	1.0		
Total		382	100.0		

Save 16% of the total sample, all respondents are at least slightly high/ drunk when they drink. Further, a rank correlation analysis was run to find out whether opinion towards drinking is associated with outcome of drinking (shown in Table 8).

Table 8: Correlation between opinion towards drinking and typical outcome of drinking

		I won't drink if alcohol would not get me high
Typical Drinking Behaviour	Spearman's rho	.105*
	Sig. (2-tailed)	.042
	N	378

*. Correlation is significant at the 0.05 level (2-tailed).

It was found that there is a small but significant correlation between opinion towards drinking and typical outcome behaviour of drinking. By positive correlation, it is inferred that the more inclined attitude towards getting *high*, the consumer did display higher level of intoxication. Considering the effect size, it can be observed that this inclination contributes only 1.10% towards variation in typical outcome of drinking. This means that 98.90% of variation in higher level of intoxication when drinking is contributed by other factors. However, it is interesting to note that more than 71% of all respondent consumers would not drink if the drink itself would not get them high.

Attempt to stop drinking

It was found that a marginal majority of 52.5% have tried to stop drinking while the remaining never had any attempt to cease their drinking habit.

Table 9: Attempt made to stop drinking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	180	47.1	47.5	47.5
	Yes	199	52.1	52.5	100.0
	Total	379	99.2	100.0	
Invalid		3	.8		
Total		382	100.0		

Morality of drinking

The respondents gave their opinion towards the question whether drinking is immoral or not. Their responses are tabulated as follows:

Table 10: Opinion whether drinking is morally acceptable

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	30	7.9	7.9	7.9
	Disgaree	181	47.4	47.8	55.7
	Neutral	43	11.3	11.3	67.0
	Agree	110	28.8	29.0	96.0
	Strongly Agree	15	3.9	4.0	100.0
	Total	379	99.2	100.0	
Invalid		3	.8		
Total		382	100.0		

It was found that around 56% of the consumers opined drinking of alcohol to be morally inacceptable. Only 33% would conclude that it is not immoral to drink while 43 respondents gave an indifferent response to the query.

Opinion of family members towards drinking

The respondents gave their feedback about how their family members felt about their drinking (shown in Table 11).

Table 11: Family's agreement towards drinking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	88	23.0	23.2	23.2
	Disgaree	214	56.0	56.5	79.7
	Neutral	39	10.2	10.3	90.0
	Agree	31	8.1	8.2	98.2
	Strongly Agree	7	1.8	1.8	100.0
	Total	379	99.2	100.0	
Invalid		3	.8		
Total		382	100.0		

It may be observed that around 80% of the families do have an objection towards their drinking even though they persistently continue their habit.

Moreover, the respondents quoted scolding and fights in the family due to their drinking as displayed in the table below.

Table 12: Scolding and fights due to drinking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	26	6.8	6.9	6.9
	Disgaree	59	15.4	15.6	22.4
	Neutral	57	14.9	15.0	37.5
	Agree	192	50.3	50.7	88.1
	Strongly Agree	45	11.8	11.9	100.0
	Total	379	99.2	100.0	
Invalid		3	.8		
Total		382	100.0		

The study shows that almost 63% of the families experience scolding and fights arising from the respondents' persistent drinking habit. Only 22% of them could avoid such scenes and incidences.

Accidents

Drinking itself attributes to substantial percentage of accidental injuries/traumas in all statistics. Thus, the respondents were asked whether they ever had any such accidents due to drinking. Their responses are tabulated below:

Table 13: Never had accident due to drinking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	24	6.3	6.3	6.3
	Disgaree	102	26.7	26.9	33.2
	Neutral	18	4.7	4.7	38.0
	Agree	166	43.5	43.8	81.8
	Strongly Agree	69	18.1	18.2	100.0
	Total	379	99.2	100.0	
Invalid		3	.8		
Total		382	100.0		

It was observed that 1/3rd of the respondents do had at least one notable accident due to drinking. 52% of the respondents still manages to avoid accidents till date.

Nuisance caused by consumers

Nuisance to community is one of the consequences of drinking. The consumers were asked whether they ever cause unrest of sorts to the public/neighbours due to their drinking. Their inputs are as follows:

Table 14: Never created any sort of nuisance to society under influence of alcohol

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	92	24.1	24.3	24.3
	Disgaree	175	45.8	46.2	70.4
	Neutral	16	4.2	4.2	74.7
	Agree	81	21.2	21.4	96.0
	Strongly Agree	15	3.9	4.0	100.0
	Total	379	99.2	100.0	
Invalid		3	.8		
Total		382	100.0		

It was found that 70.4% have been involved in some sort of nuisance to the community at least once, due to their drinking. Only a fourth claimed to be free from such incidences.

Satisfaction with permitted amount

One of the salient features of MLPC Act is the permitted amount per month for each card. When asked whether this permitted amount suffice the need of consumer, the responses are observed as follows.

Table 15: Satisfied with permitted amount under MLPC

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	51	13.4	13.5	13.5
	Disgaree	82	21.5	21.7	35.2
	Neutral	24	6.3	6.3	41.5
	Agree	147	38.5	38.9	80.4
	Strongly Agree	74	19.4	19.6	100.0
	Total	378	99.0	100.0	
Invalid		4	1.0		
Total		382	100.0		

58.5% of consumers are quite satisfied with the permitted amount under the Act while 35.2% cited otherwise.

Health issues

Alcohol consumption was correlated with various diseases as mentioned elsewhere in the study. Occurrence of health issues among consumers is tabulated as under:

Table 16: Health affected by drinking

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	23	6.0	6.1	6.1
	Disgaree	130	34.0	34.4	40.5
	Neutral	42	11.0	11.1	51.6
	Agree	155	40.6	41.0	92.6
	Strongly Agree	28	7.3	7.4	100.0
	Total	378	99.0	100.0	
Invalid		4	1.0		
Total		382	100.0		

Around 48% of the consumer respondents reported to have alcohol related health issues (whether minor or serious) and almost the same proportion reported to have not developed health issues due to drinking.

Increased consumption after MLPC

Quantity of drinks per capita has always been an issue of concern as its effect size to health and society is empirically significant. Thus, the objective of alcohol policy in any state/nation is always to reduce per capita consumption. Since MLPC brought about cheaper and legal sale of alcohol, the consumers were asked whether this Act brought about increase in their habit. Their responses is as under:

Table 17: Consumption increases after MLPC

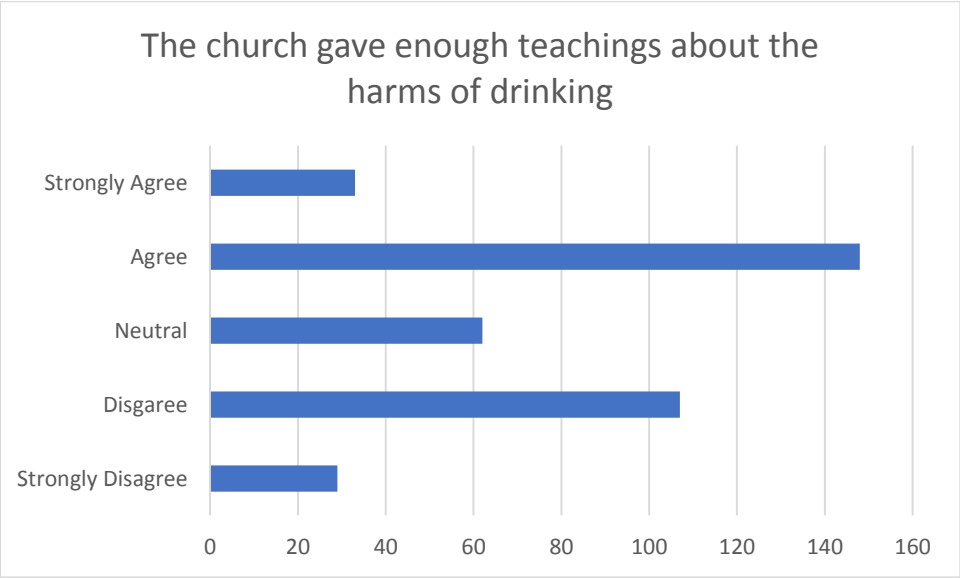
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	51	13.4	13.5	13.5
	Disgaree	156	40.8	41.2	54.6
	Neutral	37	9.7	9.8	64.4
	Agree	110	28.8	29.0	93.4
	Strongly Agree	25	6.5	6.6	100.0
	Total	379	99.2	100.0	
Invalid		3	.8		
Total		382	100.0		

Almost 36% of the consumers are of the opinion that their consumption increases after MLPC, while 55% maintains their consumption to the same level. Around 10% did not state their response.

Effort of the church towards drinking

The respondents were asked the effort of church towards alcohol. Their inputs outlined that around 47% agree that the church did gave adequate teachings about the vices and harms of drinking. However, 36% would stand otherwise. Still, there is a scope for the church in bringing more effort to educate its members in regards to possible harm and vices of alcohol.

Exhibit 2



The above response seems to be valid to those who are active and not so active in the church as inferred from Table 18a and 18b.

Table 18a: Tabulation of activeness in church and opinion about the church effort

		I am quite active in church					
		Strongly Disagree	Disgaree	Neutral	Agree	Strongly Agree	Total
Church gives adequate teaching about alcohol	Strongly Disagree	5	14	4	5	1	29
	Disgaree	7	58	12	22	8	107
	Neutral	6	35	8	12	1	62
	Agree	11	72	18	42	5	148
	Strongly Agree	2	18	5	5	3	33
Total		31	197	47	86	18	379

Table 18b: Association between activeness in church and opinion about the church effort

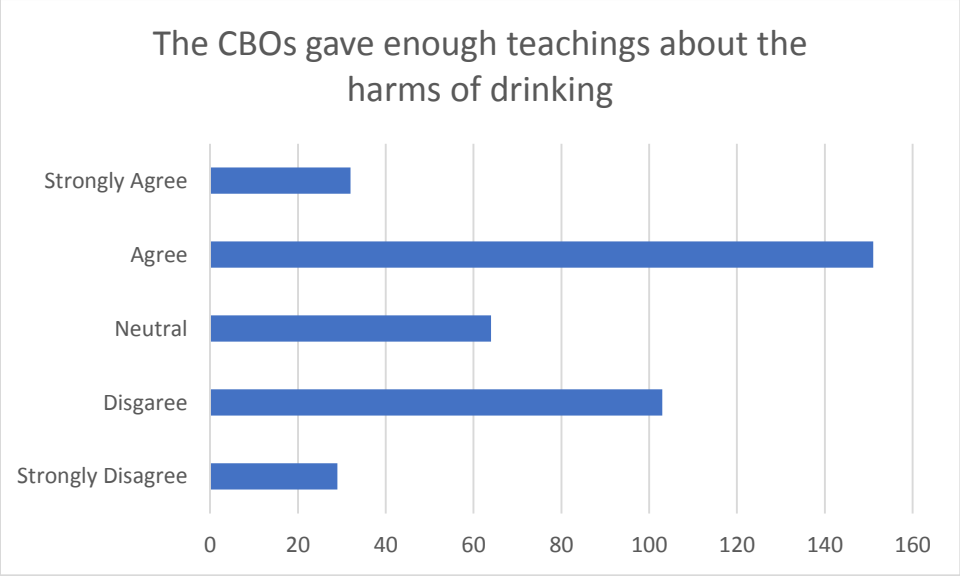
	Value	df	Asymptotic Significance
LR Test	12.988	16	.674
N of Valid Cases	379		

Likelihood ratio denotes that there is no significant association between activeness in church and their opinion about the church effort in imparting education about alcohol thereby validating the response throughout the members of the church community, whether active or not.

Effort of the CBOs (YMA etc.) towards alcohol

Similar exercise was taken regarding the effort of community-based organisations in educating the society about the harms and vices of alcohol. Their responses are as under:

Exhibit 3



It was found that 48.5% indicate CBOs gave adequate teachings with regards to alcohol. However, a significant chunk of 35% are agnostic towards this effort. This response seems valid to those who are active in CBOs and those who are otherwise as depicted by Table 19a and 19b.

Table 19a: Tabulation of activeness in CB activities and opinion about the CBOs' effort

		CBOs gives enough teaching about alcohol					
		Strongly Disagree	Disgaree	Neutral	Agree	Strongly Agree	Total
I am quite involved in community based activities	Strongly Disagree	2	6	6	8	3	25
	Disgaree	4	36	26	57	12	135
	Neutral	2	9	6	11	0	28
	Agree	14	46	22	67	14	163
	Strongly Agree	7	6	4	8	3	28
Total		29	103	64	151	32	379

Table 19b: Association between activeness in CBO and opinion about the CBOs' effort

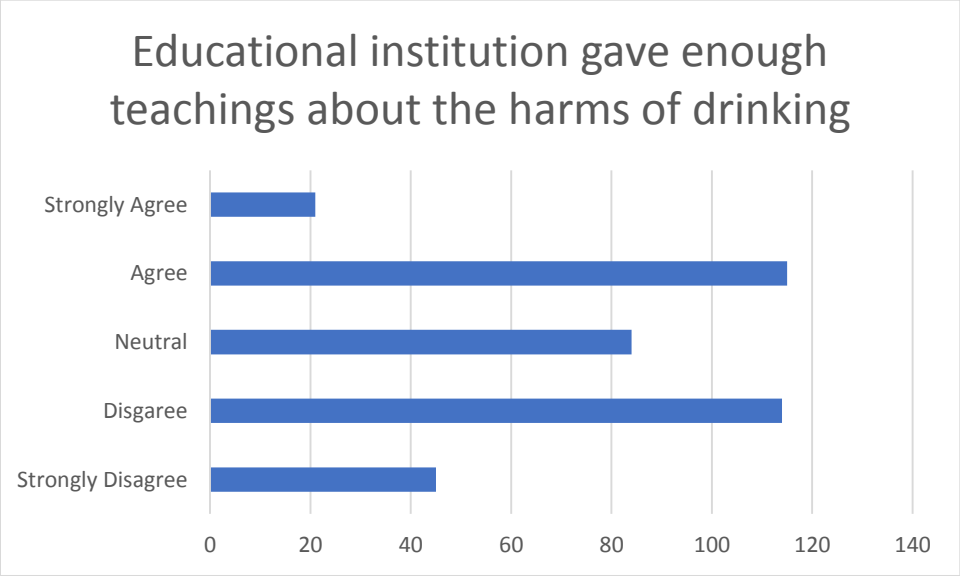
	Value	df	Asymptotic Significance
LR Test	22.534	16	.127
N of Valid Cases	379		

Likelihood Ratio test shows that statistically, there is no association between activeness in CBOs and opinion about CBOs' effort, thus validating the opinion throughout the society, whether active or not.

Effort of educational institutions towards alcohol

The consumer respondents were asked whether educational institutions took enough effort about alcohol drinking. Their responses are demonstrated below

Exhibit 4



42% of the respondents opined that educational institutions did not do well in their effort in teaching about alcohol, as compared to 35% who stated otherwise.

A correlation analysis was run to compare the relationship between level of education received and opinion towards effort of institutions in teaching about alcohol.

Table 20: Correlation between education level and opinion about the institutions' effort

		Educational institutions give enough teaching about alcohol
Education level	Correlation Coefficient	-.078
	Sig. (2-tailed)	.130
	N	375

Even though there is no significant relationship between the two variables, the negative (yet weak) relationship is worth mentioning. It seems to infer that higher these institutions in imparting education about alcohol show the education level, lesser effort.

Appendix – 2

PROFILING OF YOUTH RESPONDENTS

The present study took a sample of 672 youths across Aizawl city, comprising of students from higher secondary schools and colleges. The respondents were asked to anonymously answer a set of questions relating to alcohol consumption. The following is a report of the survey.

1. Age of Respondents

The mean age of all the respondents was 19.98 years with the youngest respondent being 15 years old. The modal age was 18, and as shown in Table 1, 46% of all the respondents were 19 years or younger. The oldest respondent was 30 years old.

Table 1: Age of Respondents

Age (in years)	Number of Respondents	Percent
15	11	1.6
16	28	4.2
17	66	9.8
18	103	15.3
19	101	15.0
20	90	13.4
21	90	13.4
22	72	10.7
23	52	7.7
24	36	5.4
25	18	2.7
26	1	.1
27	3	.4
30	1	.1
Total	672	100.0

2. Gender of Respondents

Out of 638 responses, 54.6% were male while 40.3% were female. As shown in Table 2 below, 5% of the total respondents refused to provide information about their gender while the rest 94.9% did so.

Table 2: Gender of Respondents

Gender	Number of Respondents	Percent
Male	367	54.6
Female	271	40.3
No response	34	5.1
Total	672	100

3. Respondents' Source of Family Income

The most common source of family income for the respondents was government service (50.6%) while business income came second at 17.3%.

Table 3: Respondents' Source of Family Income

Family Income Source	Number of Respondents	Percent
Business	116	17.3
Government service	340	50.6
Agriculture	65	9.7
Self-employed	59	8.8
Others	91	13.5
No response	1	0.1
Total	672	100

4. Experiences with Alcohol

4.1 Have you ever consumed alcohol?

Out of all the 672 surveyed, the majority (67.1%) said that they had consumed alcohol while 32.9% had never consumed it.

Table 4.1: Have you ever consumed alcohol?

Response	Number of Respondents	Percent
No	221	32.9
Yes	451	67.1
Total	672	100

4.2 When was the first time you consumed alcohol?

Out of the 451 who admitted to have drunk alcohol, 103 (15.3%) started doing so during the past one year. At the same time, 135 (20.1%) of them said that they started drinking more than 5 years ago.

Table 4.2: First Experience with Alcohol

Response	Number of Respondents	Percent
1 year ago	103	15.3
2 years ago	47	7.0
3 years ago	63	9.4
4 years ago	30	4.5
5 years ago	57	8.5
>5years ago	135	20.1
No response	16	2.4
Never drink	221	32.9
Total	672	100

4.3 What made you had your first drink?

The respondents were asked what factors (given in Table 4.2) caused them to take their first drink, and 22.5% replied that it was because of their friends, while 22.9% tried it out of curiosity (of taste and of sensation).

Table 4.3: First Experience with Alcohol

Response	Number of Respondents	Percent
Friends	151	22.5
Boy/Girlfriend	11	1.6
Curiosity of taste	99	14.7
Curiosity of sensation	55	8.2
No particular reason	121	18.0
No response	14	2.1
Never drink	221	32.9
Total	672	100

4.4 Frequency of Drinking

The youths were asked how frequently they drank alcohol and 43.3% replied that they did so occasionally while 1% said they drank daily.

Table 4.4: Frequency of Drinking

Response	Number of Respondents	Percent
Occasional	291	43.3
Once a month	36	5.4
Once a week	29	4.3
Quite regular	29	4.3
Daily	7	1.0
No response	59	8.8
Never drink	221	32.9
Total	672	100

4.5 Quantity of Alcohol Consumed

The youths were asked how much they usually drank and 22.5% replied that they drank one peg while 24% drank less than half a bottle. A small percent (1.5%) admitted that they drank more than one bottle at once.

Table 4.5: Quantity of Alcohol Consumed

Response	Number of Respondents	Percent
1 peg	151	22.5
<half bottle	161	24.0
Half to full bottle	59	8.8
More than a bottle	10	1.5
No response	70	10.4
Never drink	221	32.9
Total	672	100

4.6 Occasions for Drinking

Regarding the occasions that prompted the youths to drink, 19.2% of all the respondents said that festivals like Christmas etc. were occasions to drink while 20.39% of them drank at other get-togethers. At the same time, 14.73% of the respondents said that they drank anytime they liked and have no need for a special occasion an excuse to drink.

Table 4.6: Occasions for Drinking

Response	Number of Respondents	Percent (out of 672 respondents)
Festivals	129	19.2
Picnics / Outings	122	18.15
Parties	84	12.5
Other get-togethers	137	20.39
Anytime I like	99	14.73

4.7 Effect of Alcohol on Respondents' Behaviour

The youths were asked how alcohol affected their behaviour and 28.4% replied that alcohol usually got them 'high but within control'. Meanwhile, 3.7% of the respondents got 'high and out of control' and another 14.7% said they never got high.

Table 4.7: Effect of Alcohol on Respondents' Behaviour

Response	Number of Respondents	Percent
Never high	99	14.7
Little high	94	14.0
High but within control	191	28.4
High out of control	25	3.7
No response	42	6.3
Never drink	221	32.9
Total	672	100

4.8 Alcohol as Enjoyment

The respondents were asked whether they believed life could be enjoyed without drinking alcohol. Table 4.8 shows the responses. While 77.6% agreed that alcohol is not necessary for enjoyment, 7% of the respondents believed otherwise.

Table 4.8: Do you think life can be enjoyed without drinking?

Response	Number of Respondents	Percent
Strongly disagree	22	3.3
Disagree	25	3.7
No opinion	104	15.5
Agree	200	29.8
Strongly agree	321	47.8
Total	672	100.0

5. Effect of Alcohol on Studies

The youths were asked how alcohol affected their studies and 84 (i.e. 12.5%) agreed that drinking alcohol affected their studies while 32.5% disagreed and 22.2% had no opinion on the issue as shown in Table 5.1.

Table 5.1: Effect of Alcohol on Studies

Response	Number of Respondents	Percent
Strongly disagree	96	14.3
Disagree	122	18.2
No opinion	149	22.2
Agree	62	9.2
Strongly agree	22	3.3
Never drink	221	32.9
Total	672	100

Further, as shown in Table 5.2, more than half of the respondents (55.2%) knew someone who failed their studies or dropped out from school/college largely because of drinking alcohol.

Table 5.2: Do you know any youth who failed/dropped out largely because of alcohol?

Response	Number of Respondents	Percent
No	222	33
Yes	371	55.2
No response	79	11.8
Total	672	100

6. Alcohol and Respondents' Family Life

The respondents were asked several questions regarding the effect of alcohol on their family life.

As shown in Table 6.1, 19.6% of the respondents reported that their parents knew that they were drinking while the parents of 28.7% did not. At the same time, 18.8% of the respondents were unsure whether their parents knew about their drinking or not.

Table 6.1: Do your parents know of your drinking?

Response	Number of Respondents	Percent
No	193	28.7
No opinion	126	18.8
Yes	132	19.6
Never drink	221	32.9
Total	672	100

The respondents were also asked whether their parents approved of their drinking. As shown in Table 6.2, only 6% replied that their parents would approve while more than half (54.5%) were unsure. The rest 39.6% admitted their parents did not approve of their drinking.

Table 6.2: Do your parents approve of your drinking?

Response	Number of Respondents	Percent
No	266	39.6
No opinion	366	54.5
Yes	40	6.0
Total	672	100

The respondents were also asked whether there was anyone in their family who drinks. As shown in Table 6.3, more than half (58.3%) of the respondents had at least one family member who drinks. While 23.06% of the youths had one parent drinking, 1.34% of them had both parents drinking alcohol.

Table 6.3: Do your family members drink?

Response	Number of Respondents	Percent
Father / Mother	155	23.06
Both parents	9	1.34
Brother / Sister	87	12.95
Uncle / Aunt	78	11.61
Other relatives	88	13.09
No response	280	41.7

When asked whether alcohol caused problems at home, 37.5% of the respondents responded that alcohol caused various kinds of problems at home such as verbal abuse (25.45%), physical violence (8.93%), property damage (7.44%) and sexual abuse (0.59%).

Table 6.4: Does alcohol create problems in your house?

Response	Number of Respondents	Percent
Verbal abuse	171	25.45
Physical violence	60	8.93
Damage to property	50	7.44
Sexual abuse	4	0.59
No response	420	62.5

The respondents were also asked to rate their agreement to a statement- 'I wish my family members would stop drinking'. While half of them (51.3%) had no opinion on the statement, 44.9% agreed with the statement and the rest 3.7% disagreed.

Table 6.5: I wish my family members would stop drinking.

Response	Number of Respondents	Percent
Strongly disagree	10	1.5
Disagree	15	2.2
No opinion	345	51.3
Agree	128	19.0
Strongly agree	174	25.9
Total	672	100

7. Association between Alcohol and Sex among the Respondents

Even though it is a highly personal and sensitive issue, the association between sex and alcohol was also inquired. Table 7.1 shows that while 19.19% of all the respondents admitted to have some experience with sex, the majority (74.85%) responded that they had no experience.

Table 7.1: Have you ever had sex?

Response	Number of Respondents	Percent
No	503	74.85
Yes	129	19.19
No response	40	5.95
Total	672	100

As shown in Table 7.2, among the respondents who have had sex, 15.9% said that alcohol was not involved while 3.3% said alcohol was involved in their first sexual experience.

Table 7.2: Did you have alcohol the first time you had sex?

Response	Number of Respondents	Percent
Never had sex	499	74.3
No	107	15.9
Yes	22	3.3
No response	44	6.5
Total	672	100

The respondents were also asked whether alcohol was associated with their sex life. Table 7.3 shows the responses. While 1.9% agreed that alcohol was associated with their sex life, 13.1% of the respondents did not associate alcohol with their sex life and 4% had no opinion.

Table 7.3: I usually associated sex with my drinking.

Response	Number of Respondents	Percent
Never had sex	499	74.3
No	88	13.1
No opinion	27	4.0
Yes	13	1.9
No response	45	6.7
Total	672	100

When asked whether alcohol encourages sex among the youth, 46.9% of the respondents thought so while 10% did not think that drinking encourages sex among the youth. The rest 43.2% had no opinion about the statement.

Table 7.4: Do you think drinking encourages sex among the youth?

Response	Number of Respondents	Percent
Strongly disagree	28	4.2
Disagree	39	5.8
No opinion	290	43.2
Agree	250	37.2
Strongly agree	65	9.7
Total	672	100.0

8. Respondents' Attitudes towards the MLPC Act

When the respondents were asked whether the introduction of the MLPC Act and the resultant legal sale of alcohol increased their alcohol consumption, 13.7% agreed that their drink more often while 18.8% disagreed with the statement. About one-third (34.7%) had no opinion about the statement.

Table 8.1: I drink more often after the legal sale of alcohol.

Response	Number of Respondents	Percent
Never drink	221	32.9
Strongly disagree	49	7.3
Disagree	77	11.5
No opinion	233	34.7
Agree	69	10.3
Strongly agree	23	3.4
Total	672	100.0

The respondents were asked about their opinion regarding the success of the MLPC Act and, as shown in Table 8.2, 21.8% believed it to be successful while 35.5% did not think so. The rest 42.6% were undecided about the issue.

Table 8.2: I believe the MLPC Act is successful.

Response	Number of Respondents	Percent
Strongly disagree	104	15.5
Disagree	136	20.2
No opinion	286	42.6
Agree	116	17.3
Strongly agree	30	4.5
Total	672	100

The respondents were also asked to compare the MLTP Act with the MLPC Act. As shown in Table 8.3, 30.4% believed both Acts to be failures while 15% regarded the MLPC Act to be more successful.

Table 8.3: Which is more successful- the MLTP Act or the MLPC Act?

Response	Number of Respondents	Percent
MLTP	76	11.3
MLPC	101	15.0
Both equally failed	204	30.4
No opinion	291	43.3
Total	672	100.0

Appendix – 3

PROFILING OF ALCOHOL DEPENDENT PATIENTS (ADPs)

The following information is obtained from those clinically admitted ADPs at Kulikawn Hospital, Aizawl.

1. Gender:

Categorization of alcohol dependent patients may be seen as below

Table 1: Gender of the respondents

Gender	Number of respondents	Percent
Male	194	93.7
Female	13	6.3
Total	207	100.0

Table 1 shows that among 207 patients, 194 (93.7%) are male and the rest 13 (6.3%) are female.

2. Marital Status:

The respondents were asked of their marital status and their responses are tabulated accordingly.

Table 2: Marital status of the respondents

Marital Status	Number of respondents	Percent
Never Married	51	24.6
Married	95	45.9
Divorces/Separated	38	18.4
Widow/Widower	10	4.8
Separated due to Alcohol	13	6.3
TOTAL	207	100

Among 207 respondents, 95 (45.9%) are married and rest 24.6% of them are never married, 18.4% are divorced and 4.8% are widow/widower. Interestingly, 6.3% pf the respondents (13) claims that they are separated due to alcohol.

3. Age at First Drink:

   Age of initiation in drinking is categorized and responded to in the following manner.

Table 3: Age of the respondents at their first drink

Age	Number of respondents	Percent
Below 18	149	72
Between 18 – 25	47	22.6
Above 25	5	2.5
Can't say	6	2.9
TOTAL	207	100

Among 207 alcohol dependent patients, 149 (72%) of them had their first drink before they attain the age of 18. This shows that most of the alcoholic already taste alcohol under-age.

4. Causes of first drinks:

   Reasons/causes for first drink were categorized and administered to the ADPs. Their reaction may be tabulated as follows.

Table 4: Causes of first drinks

Causes	Number of respondents	Percentage
Peer pressure	73	35.3
Curiosity of effect	117	56.5
Party	5	2.4
Picnic	1	.5
Stress	5	2.4
Other	1	.5
Can't say	5	2.4
TOTAL	207	100

The above analysis shows the reason of first drinks by the respondents. It can be seen from the above table that most of the alcoholic patients (i.e. 117) had their first drink due to curiosity of effect and taste (56.5%), followed by peer pressure (35.3%).

5. Age at regular drinking:

   Following tabulation shows age of the respondents when they started developing regular drinking habits in their life.

Table 5: Age at regular drinking

Age	Number of respondents	Percent
15-20	43	20.8
21-25	52	25.1
26-30	56	27.1
31-35	56	27.1
Above 35	34	16.4
Can't say	5	2.4

Among 207 patients, most of them had regular drinking at the age between 26-30 and 31-35 i.e. 27.1% respectively. It maybe said that most of the respondents had the habit of regular drinking between 26-35. However, 43 of the respondents (20.8%) had regular drinking before they attained the age of 20. And 25.1% of the respondents also had regular drinking habit between the age of 21 and 25.

6. History of Substance Abuse in the family:

   Following table shows the history of substance abused in patients' family.

Table 6: History of Substance Abuse in the family

Name of Abused	Number of respondents	Percentage
Father	81	39.1
Mother	1	.5
Uncle	18	8.7
Elder Brother	21	10.1
Husband	1	.5
Son	1	.5
Both Father and Uncle	2	1.0
Father, Mother, siblings	1	.5
None in family	81	39.1
TOTAL	207	100

Among 207 respondents, 81 of them i.e. 39.1% claims that there is no history of substance abuse in their family. On the other hand, the same number of respondents (81) claims that his/her father had substance abuse, followed by elder brother (21), uncle (18), mother (1) respectively. Thus, it may be possible to say that 126 of the

respondents i.e. 68.9% of the respondents faced history of substance abuse in their family.

7. Abstinence:

   In the study, alcoholic patients were asked whether they have ever tried to abstain from drinking. Their responses are as follows.

Table 7: Abstinence from drinking

Responds	Number of respondents	Percent
Yes	170	82.1
No	37	17.9
Total	207	100

82.1% of the respondents claims they practices abstinence from drinking in their life, whereas the rest 17.9% claims that they never stop drinking in anytime of their life.

8. Reason of Relapse:

   Following tabulation shows reason of relapse by the respondents after they got abstinence from drinking.

Table 8: Reason of relapse by the respondents

Reason	Number	Percentage
Peer influence	31	14.9
Craving	104	50.3
No particular reason	21	10.1
Loneliness	3	1.4
Heartbroken	2	1.0
Stress	6	2.9
No response	40	19.3

50.3% of the respondents who tried abstinence from drinking resume their drinking habit due to craving, and the next 14.9% resume due to peer influence.

9. Increase dose after MLPC:

   In the present study, alcoholic patients were asked whether their dose were increased after MLPC, following table shows the result.

Table 9: Increase dose of alcohol after MLPC

Response	Number of respondents	Percentage
Yes	114	55.1
No	93	44.9
Total	207	100

55.1% of the respondents claim that their dose of alcohol was increased after implementation of MLPC in the state. Whereas the rest 44.9% respondents said otherwise.

10. Other substance:

The response of alcoholic patients to the query whether they have involved in other substance other than alcohol may be seen below.

Table10: Other substances

Response	Number of respondents	Percentage
Yes	190	91.8
No	17	8.2
Total	207	100

The above table 10 shows that among 207 alcoholic patients, 91.8% claims that they are involved with other substance and the rest 8.2% claims that they are not involved with other substance apart from alcohol.

The types of other substance used by the respondents other than alcohol may be seen in Table 11.

Table 11: Type of other substance

Type of substance	Number of respondents	Percentage
Tobacco	114	60
Dendrite	1	0.53
Drugs	2	1.05
Ganja	3	1.58
H/o of opioid dependence	4	2.11
No. 4	13	6.84
Pills	2	1.5
Proxyvon	1	0.53
No response	50	26.32

11. Type of Alcohol consumed:

Following table shows alcohol preferences of the respondents

Table 12: Type of Alcohol

Type	Number of respondents	Percentage
Local	76	36.7
Others	131	63.3
Total	207	100

The above analysis shows that, 36.7% of the respondents claims that they prefer local made alcohol above other alcohol that are sold in the state under MLPC.

12. Reason for choosing local made alcohol:

Following table shows the reason for choosing local made alcohol over other imported alcohol in the state by the respondents.

Table 13: Reason for choosing local made alcohol

Reason	Number of respondents	Percentage
Easy to drink	5	7
Low budget	50	66
Healthier	15	20
Prefer the taste	6	7
TOTAL	76	100

Among 76 respondents who claimed that they chose local made alcohol over others, 66% of them said they chose it because of the low budget to buy alcohol. 20% claims they thought that local made alcohol is healthier than IMFL. The rest claim local drinks are easy to drink and prefer the taste.

13. Expenditure on Alcohol:

Following table shows daily expenditure incurred by alcoholic patients on alcohol

Table 14: Daily Expenditure

Expenditure	Number of respondents	Percentage
Less than 100	8	3.86
100-200	41	19.81
200-300	62	29.95
300-400	44	21.26
400-500	20	9.66
500-600	20	9.66
600-700	4	1.93
700-800	1	0.48
800-900	1	0.18
900-1000	1	0.48
1000 and above	5	2.42
Total	207	100

Around 51% of the ADPs spent between Rs. 200-400 per day on drinks. Almost 20% of them stated their daily expenditure to be around Rs. 400-600 on their drinks.

14. Problems due to alcohol:

Types of domestic problems faced by the ADPs are tabulated as follows

Table 15: Types of family problem

Types of problems	Number of respondents	Percentage
Financial	39	18.84
Marital	24	11.59
Family	59	28.50
Both Financial and Marital	17	8.21
Both Financial and Family	17	8.21
Both Marital and Family	1	0.48
No problem	50	24.15

The above analysis shows that, among 207 respondents, 24.15 % (50) of them faced no problems in their family due to alcohol, whereas 28.50% faced family problems, 18.84% faced financial problems and 11.59% faced problems regarding marriage due to alcohol.