



## **Socio-Economic Status and Tobacco Consumption by Undergraduate Students: A Comparison between Active, Past and Non-Tobacco Consumers in Select Colleges of Mizoram**

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### *Abstract*

*This study analyses the association between select socio-economic factors and tobacco consumption by undergraduate students in select colleges in Mizoram using Percentage wise comparison along with Pearson Chi-Square Test and Fisher's Exact Test. No significant association has been found between the respondent's family size, relationship status, family income, family occupation and financial dependency with respondent's tobacco consumption status. However, significant association has been found between tobacco consumption in the family of the respondents and the respondent's personal tobacco consumption status.*

**Keywords:** *Tobacco, Socio-Economic, Tobacco Consumption, Mizoram, College Students.*

### **Introduction**

The term “socioeconomic” can be defined as a “field of study that examines social and economic factors to better understand how the combination of both influences something” (Business Dictionary, 2019). The measure of socioeconomic status generally includes education, income, and occupation (Baker, 2014). According to Barik et al. (2016), “it is important to use the best possible indicators of socio-economic position to have a comprehensive picture of social inequities in tobacco use”. Reddy and Gupta (2004) have recommended for research scientists to identify the economic and socio-cultural determinants of tobacco use in different demographic groups in India. Reddy et al., (2010) has given research on the economic impact of tobacco use and tobacco control and social determinants of tobacco use as among the highest priorities for tobacco control research in low- and

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middle-income countries. According to Mathur et al., (2014), “socioeconomic differences in tobacco use in adolescents can be viewed as a prelude to socioeconomic differences in tobacco use and related health hazards in adulthood”. Studies have pointed and identified that socioeconomic factors like income, education, caste, gender, age and region of residence are linked to tobacco use (Fouad et al., 2016; Lal et al., 2015; Mini, Sarma & Thankappan, 2014; Rawat, Gouda & Shekhar, 2016; Singh & Ladusingh, 2014; Thakur et al., 2015; Thankappan & Thresia 2007; Turk et al., 2012; Ahmed & Peeran, 2016) and key predictors of smoking lifestyle (Yaya et al., 2017). Gordon et al., (2004) found strong independent effects of socio-economic status and social class on health behaviour related to smoking, drinking and chewing tobacco. It has been found that besides causing poverty (John, 2005); tobacco leads to a vicious cycle of social problems that hinders the development of individuals, households and nations (Eriksen et al., 2015; Eriksen, Mackay & Ross, 2012). This is the reason that tobacco control is now being considered to be increasingly important for economic development and poverty reduction in low and middle-income countries (Novotny & Mamudu, 2008).

Globally, tobacco consumption kills more than eight million people every year (WHO, 2019) and its use is the single most preventable cause of mortality (AII, 2012; Reddy et al., 2010; WHO, 2011). In India, 28.6% of all adults consume tobacco in any form (WHO, 2018) and the consumption of tobacco significantly varies across states and regions, (Singh & Ladusingh, 2014) demographics, socio-economic status and other factors (Lal et al., 2015). The Global Adult Tobacco Survey during 2009-2010 and 2016-2017 has revealed high prevalence of tobacco use and high percentage of young tobacco users in India’s north-eastern states. According to Singh and Ladusingh (2014), the adults in the north-east region of India are among the most vulnerable population subgroups in India. According to GATS India Report 2016-2017, the north-eastern state of Mizoram has the second highest prevalence of tobacco users at 58.7%, which is more than double the national average of 28.6 per cent in the country (MHFW, 2017). This high prevalence of tobacco consumption is still one of the major problems that continue to adversely affect the physical and social wellbeing of the Mizo society. The most susceptible time for tobacco initiation in India has been identified as adolescence and early adulthood (NSSO, 1998; Reddy & Gupta, 2004; Jindal et al., 2005). The average age of initiation in Mizoram of any tobacco use is 17.8 years, for smoking initiation it is 17.5 years and for smokeless tobacco use it is 18.3 years (MHFW, 2017). This average age of initiation to tobacco in Mizoram is more inclined towards approaching college students. As college students enjoy least restrictive environment compared to school students, they have increased opportunity to experiment with behaviours such as drinking and smoking (Maggs, 1997; O’Malley & Johnston, 2002). The objective of this study is to explore how select socio-economic factors are related to tobacco consumption by undergraduate students in Mizoram.

## **Methodology**

This study is based on primary data collected from a sample of undergraduate students in Mizoram. There were two sampling procedures applied for the study. At first, judgmental sampling was used while selecting the colleges and districts and then random

sampling technique was used for selecting the respondent students from the selected colleges. A sampling frame constituting all the students pursuing undergraduate studies at Pachhunga University College in Aizawl and Government Saiha College in Saiha was drawn for the study. At the time of study, these two colleges in Mizoram had the largest number of students in their respective districts. Considering the total number of enrolled undergraduate students as the population, a sample size of 322 and 176 undergraduate students were determined (at 95 percent confidence level) from Pachhunga University College and Government Saiha College, respectively. The final composite sample size was determined as 500 with an addition of one undergraduate student each for both the colleges. A carefully designed questionnaire has been used to collect information related to socio-economic status of the respondents. During analysis, the respondents have been classified into Active Tobacco Consumers, Past Tobacco Consumers and Non Tobacco Consumers based on their tobacco consumption status at the time of survey. Percentage wise comparison along with Pearson Chi-Square Test and Fisher's Exact Test were carried out to test the level of significant association between socio-economic factors and tobacco user categories.

### **Socio-Economic Overview of Mizoram**

Mizoram is among the four fastest growing states in India which includes Gujarat, Jharkhand, Mizoram and Tripura (PPID, 2018). According to census 2011, the total population of Mizoram is 10, 97, 206 with a sex ratio of 976 (DES, 2018) and a population density only 52 persons per sq km (PPID, 2018). Mizoram is also a state with a high urban population. According to the 2011 Census, 51.5% of the population in Mizoram is urban compared to 18.3% and 31.2% respectively for all the Northeastern states combined and for the entire India (DES, 2018). Aizawl, which is the largest city and capital of Mizoram, has a total population of 4, 00, 309 (DES, 2018). Mizoram also has an impressive literacy rate of 91.33% (DES, 2018), which according to the 2011 census, is higher than the average of all northeastern states at 79.3% and the national average of 74% (PPID, 2018). In 2019-20, Mizoram recorded a 10 per cent drop in Infant Mortality Rate at 5 per cent (per 1000 live births), which is second only to Nagaland (The New India Express, May 10, 2020). In one survey called the India Happiness Report 2020, Mizoram has been ranked as the happiest state in India (Times of India, September 22, 2020). According to the Economic Survey 2017-2018, Ministry of Finance, Government of India, the per capita income of Mizoram for the year 2015-2016 was Rs. 114524 which was considerably higher than the per capita income of all northeastern states at Rs. 101631.6 and India at Rs. 94130 (PPID, 2018). The Gross State Domestic Product (GSDP) of Mizoram had expanded at Compound Annual Growth Rate (CAGR) of 15.93% to Rs. 176.20 billion and the per capita GSDP grew at CAGR of 14.23% to Rs. 145,143 between 2011-12 and 2017-18 (IBEF, 2019). It is estimated that around 70% of the total population in Mizoram is dependent on some form of agriculture. 88.93% of Mizoram's total geographical area is covered by forest out of which, Bamboo forests covers around 3,267 square kilometre of Mizoram's entire geographical area. It is estimated that there is a growing stock of 25.26 million metric tonnes of 35 different varieties of bamboo in the state (IBEF, 2019). Sericulture is another important industry of Mizoram. During 2018-19, the raw silk production in Mizoram stood at 75.0 metric tonnes (IBEF, 2019). Besides all these, food and agro processing, hydro power, tourism, handloom

etc. has also been identified to hold great potential for the economic development of Mizoram. Mizoram has a location advantage as it shares domestic state borders with Manipur, Tripura and Assam and international borders with neighbouring countries of Bangladesh and Myanmar.

### **Sample Composition**

#### **College Composition**

Out of the 500 respondents, 64.6% were from Pachhunga University College and rest 35.4% were from Government Saiha College. 71.33% of all the Non-Tobacco Consumers were from Pachhunga University College and 28.67% were from Government Saiha College. Similarly, 61.08% of all Active Tobacco Consumers were from Pachhunga University College and 38.92% were from Government Saiha College. Lastly, 68.29% of all Past Tobacco Consumers were from Pachhunga University College and rest 31.71% were from Government Saiha College.

#### **Course Composition**

Out of the 500 respondents, 71.6% were studying BA, 21% were studying BCom and only 7.4% were studying BSc courses. Among the Non Tobacco Consumers, 57.34% were studying BA, 32.17% were studying BCom and 10.49% were studying BSc courses. Among Active Tobacco Consumers, 78.16% were studying BA, followed by 16.45% studying BCom, followed by 5.38% studying BSc courses. Finally, among the Past Tobacco Consumers, 70.73% were studying BA, 17.07% were studying BCom and 12.19% were BSc courses.

#### **Age Composition**

The average age of the respondents was 20.52 years. The highest average age was 20.71 years for the Active Tobacco Consumers followed by 20.24 years for the Past Tobacco Consumers, which is closely followed by 20.2 years for the Non Tobacco Consumers. However, as undergraduate students, most of the respondent's age falls between 18 to 23 years.

#### **Gender Composition**

Out of all the respondents, 50.2% were male and 49.8% were females. Among the Non-Tobacco Consumers 62.24% were females and 37.76% were males. However, among the Active Tobacco Consumers 54.11% were males and the rest 45.89% were females. Also among the Past Tobacco Consumers, 63.41% were males and remaining 36.59% were females. Therefore, quite evidently tobacco consumption is more prevalent among male undergraduate students than female undergraduate students.

### **Comparative Analysis**

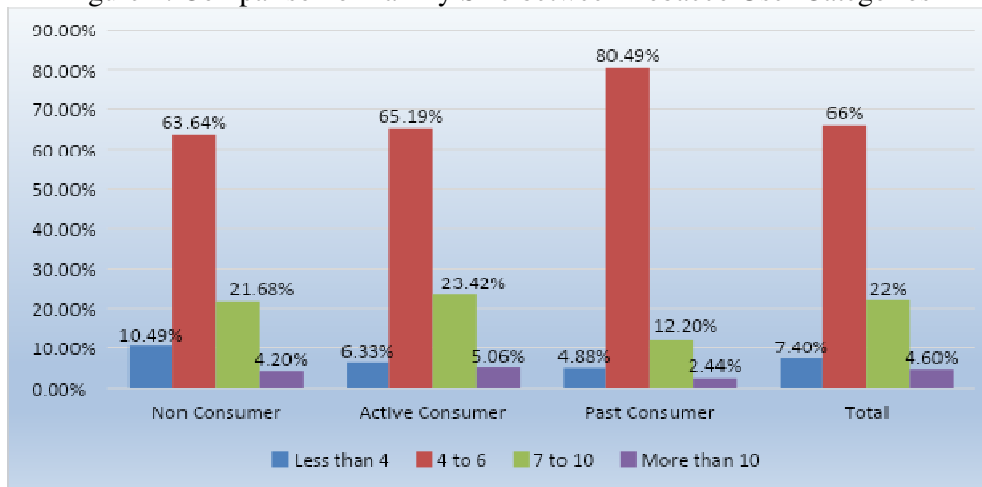
This section presents the comparative analysis of socio-economic factors between Active Tobacco Consumers, Non-Tobacco Consumers and Past Tobacco Consumers among the respondent undergraduate students. The socio-economic factors selected for comparison

include family size, relationship status, family income, family occupation, financial dependency and tobacco consumption in the family.

### Comparison of Family Size

Mizoram has a well-knit societal structure without any caste or class system and the Mizo community is free from any rank or status consciousness (Pachau, 2009). The Mizo society in general is characterized by closely knit families with a strong tradition of shared family values among the family members. Many studies have explored the relationship between nature of consumption and family size (Sivakumar, 1976; Bick & Choi, 2013; Kiran & Dhawan, 2015).

Figure 1: Comparison of Family Size between Tobacco User Categories



Source of Data: Field Study

An analysis of the primary data reveals that the majority (66%) of the respondents have 4 to 6 members in their family followed by respondents (22%) with 7 to 10 family members. As shown in Figure 1, there is not much difference between Active Tobacco Consumers and Non Tobacco Consumers in terms of family sizes. However, 80.49% of the Past Tobacco Consumers have 4 to 6 family members which is little higher compared to both Non Tobacco Consumers and Active Tobacco Consumers.

Table 1: Test of Association between Family Size and Tobacco User Categories

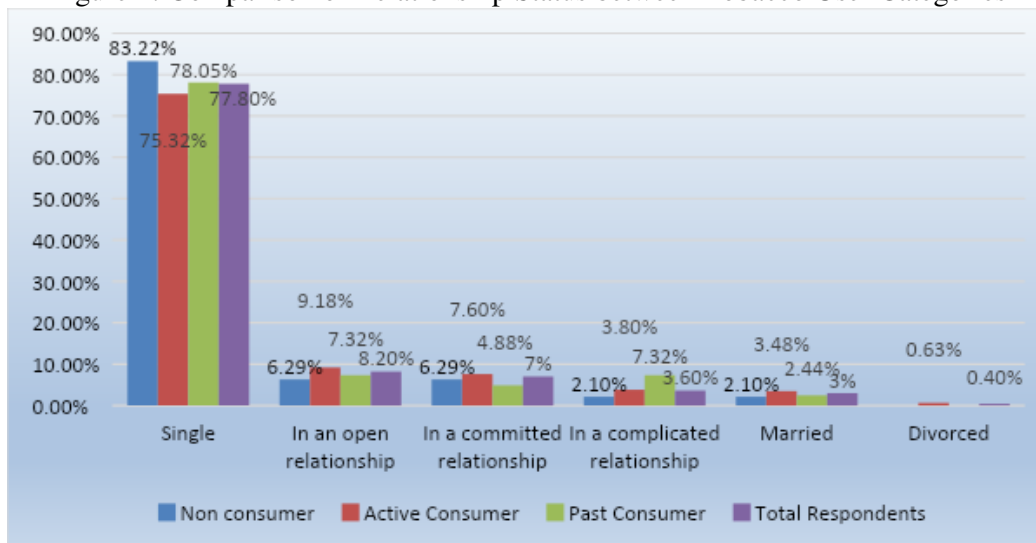
Test	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
<b>Pearson Chi-Square</b>	9.425 <sup>a</sup>	8	.308	.289
<b>Fisher's Exact Test</b>	9.250			.316
<b>N of Valid Cases</b>	500			
a. 5 cells (33.3%) have expected counts less than 5. The minimum expected count is .08.				
b. The standardized statistic is -.132.				

A test of significance (Table 1) also shows that there is no significant association between family size and tobacco user categories as the p value (Fisher's exact test) is 0.316 (i.e.  $p > .05$ ). Therefore, family sizes are not a determining factor for consumption of tobacco by undergraduate tobacco consumers in Mizoram.

### Comparison of Relationship Status

The relationship status of an individual may be also linked to a person's lifestyle choices, behavioural characteristics and emotional wellbeing. Katulanda et al., (2015) found that having a girlfriend or boyfriend who smokes was significantly correlated with smoking among schoolchildren in Colombo, Sri Lanka. On the other hand, Mousawi (2014) found that smoking was positively related to being unmarried among university students in Iraq.

Figure 2: Comparison of Relationship Status between Tobacco User Categories



Source of Data: Field Study

In the present study, the respondents were asked to reveal their relationship status under few predefined categories namely, “Single” (having no partner), “In an open relationship” (having one or more partner without any commitment), “In a committed relationship” (having commitment with a single partner), “In a complicated relationship” (having one or more partner where the nature of relationship is taboo or difficult to define), “Married” and “Divorced”. Out of all the respondents, 77.8% have revealed that they are presently single, 8.2% are in an open relationship, 7% are in a committed relationship, 3.6% are in a complicated relationship, 3% are married and only 0.4% are divorced. The percentage of students who are in an open relationship and in committed relationships is slightly higher at 9.18% and 7.6% respectively among Active Tobacco Consumers. Students who revealed that they are in a complicated relationship is higher among Past Tobacco Consumers which is 7.32%. The percentage of married students is also marginally higher among the Active

Tobacco Consumers which is 3.48%. In conclusion, we can say that the majority (77.8%) of the respondents are found to be single but the percentage of single students is higher among Non-Tobacco Consumers (83.22%) than Active Tobacco Consumers (75.32%).

Table 2: Test of Association between Relationship Status and Tobacco User Category

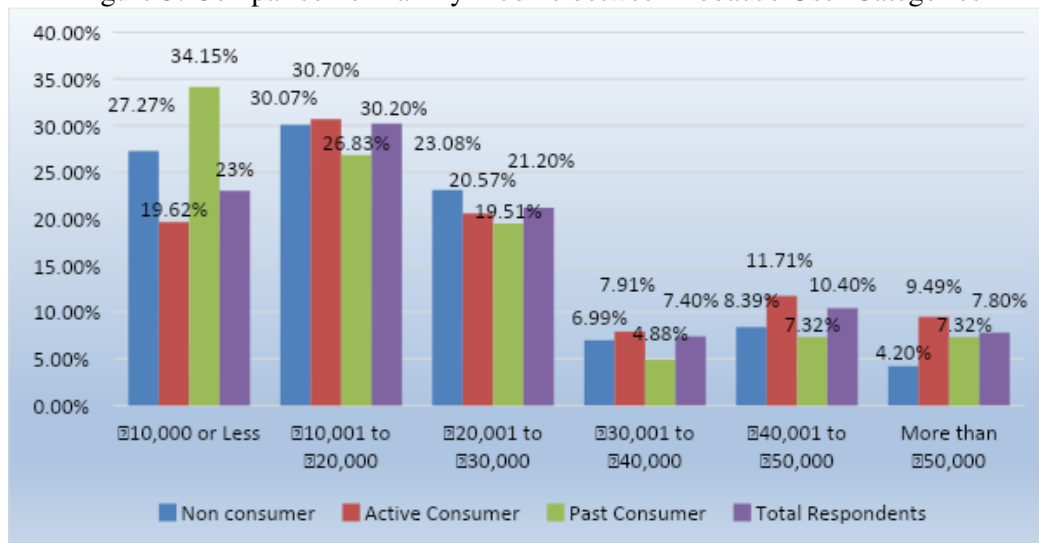
Test	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
<b>Pearson Chi-Square</b>	6.700 <sup>a</sup>	10	.753	.747
<b>Fisher's Exact Test</b>	6.125			.797
<b>N of Valid Cases</b>	500			
a. 8 cells (44.4%) have expected counts less than 5. The minimum expected count is .16.				
b. The standardized statistic is 1.525.				

The Pearson Chi-Square Test (Table 2) shows a significant level of 0.753 (i.e.  $p > 0.05$ ), indicating a non-significant association between tobacco user category and their relationship status. Therefore it seems that the relationship status of the undergraduate students is not a determining factor for their choice of tobacco consumption.

### Comparison of Family Income

The income, in general, is one of the most important factors that determine the aspiration, choice, selection, quantity and frequency of consumption (Thomas, 2013; Terzioğlu, Mehmet & Doğangün, 2013).

Figure 3: Comparison of Family Income between Tobacco User Categories



Source of Data: Field Study

The average monthly household income of most of the respondents falls below Rs. 30,000 where 23%, 30.2% and 21.2% of the respondent's average monthly household income is Rs. 10,000 or less, between Rs. 10,000 to Rs. 20,000 and between Rs. 20,000 to Rs. 30,000 respectively. Moreover, only 19.62% of the Active Tobacco Consumers have an average monthly household income of Rs. 10,000 or less, compared to Non-Tobacco Consumers (27.27%) and Past Tobacco Consumers (34.15%).

Table 3: Test of Association between Family Income and Tobacco User Category

Test	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
<b>Pearson Chi-Square</b>	24.459 <sup>a</sup>	20	.223	. <sup>b</sup>
<b>N of Valid Cases</b>	500			
a. 8 cells (24.2%) have expected counts less than 5. The minimum expected count is 1.15.				
b. Cannot be computed because there is insufficient memory.				

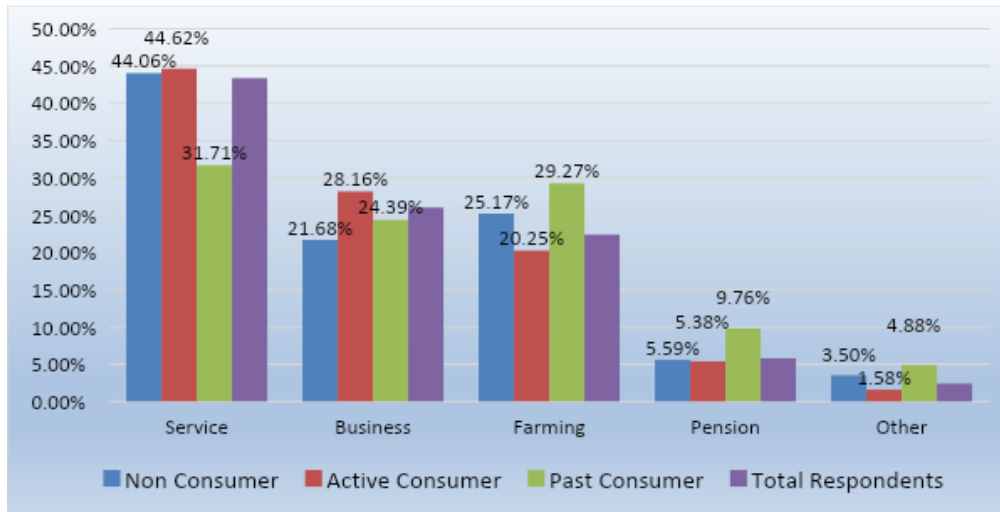
A Pearson Chi-Square test (Table 3) reveals that there is no significant association between family income and tobacco user category as the p value is 0.223 (i.e.  $p > .05$ ).

### Comparison of Family Occupation

The family occupation is an important socio-economic factor that influences or determines the nature of lifestyle, economic prosperity and consumption behaviour of people to a large extent. In general, service, business and farming are the major occupational choices and sources for steady income for the vast population in Mizoram. 43.4% of the respondent's primary family occupation is service followed by 26% respondents whose primary family occupation is business which is again followed by 22.4% of respondents whose primary family occupation is farming. The percentage of respondent's families whose primary family occupation is service is almost the same among the Non-Tobacco Consumers (44.06%) and Active Tobacco Consumers (44.62%) but less among Past Tobacco Consumers (31.71%). Business as a primary family occupation is highest among Active Tobacco Consumers (28.16%) compared to Non-Tobacco Consumers (21.68%) and Past Tobacco Consumers (24.39%). Farming as a primary family occupation on the other hand is highest among Past Tobacco Consumers (29.27%) compared to Non-Tobacco Consumers (25.17%) and Active Tobacco Consumers (20.25%).



Figure 4: Comparison of Family Occupation between Tobacco User Categories



Source of Data: Field Study

Table 4: Test of Association between Family Occupation and Tobacco User Category

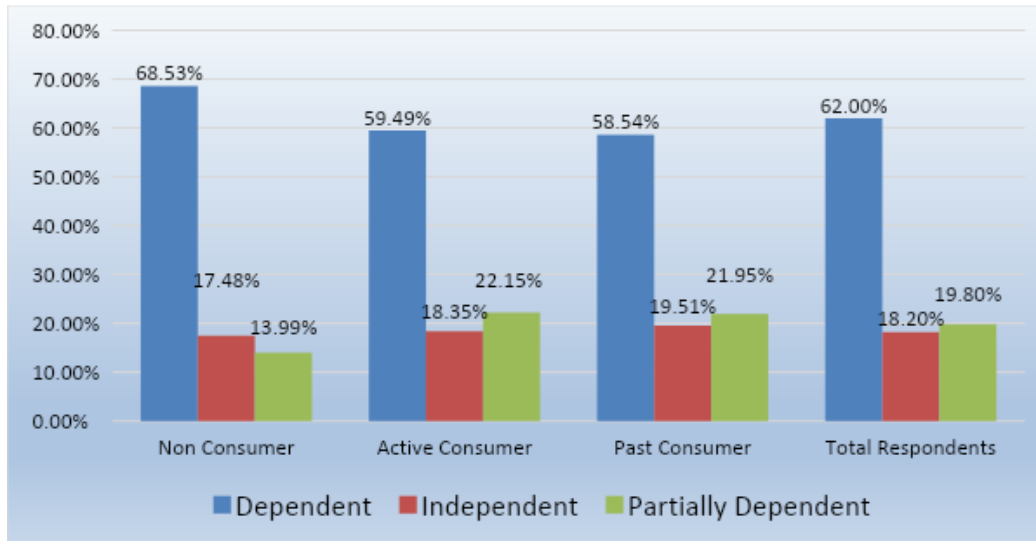
Test	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
<b>Pearson Chi-Square</b>	8.916 <sup>a</sup>	8	.349	.346
<b>Fisher's Exact Test</b>	9.803			.251
<b>N of Valid Cases</b>	500			
a. 3 cells (20.0%) have expected counts less than 5. The minimum expected count is .98.				
b. The standardized statistic is .502.				

The Fisher's Exact Test (Table 4) shows a significant level of 0.251 i.e. ( $p > 0.05$ ), indicating a non-significant association between tobacco user category and family occupation. Therefore, family occupation may not be regarded as a determining factor for tobacco consumption among undergraduate students in Mizoram.

### Comparison of Financial Dependency

Most of the students surveyed were in their early 20s and therefore not expected to be financially independent from their families. It may be assumed that it is difficult for the financially dependent students to indulge themselves in daily tobacco consumption as they have limited resources for spending. On the other hand, students who are financially independent or partially dependent may find it a little easier to spend the extra money they possess on tobacco products. Further, such students may also experience greater sense of personal freedom and lesser sense of accountability about their lifestyle choices and decisions.

Figure 5: Comparison of Financial Dependency between Tobacco User Categories



Source of Data: Field Study

62% of the respondents surveyed have been found to be financially dependent on their families and only 18.2% are found to be independent and 19.8% have said that they are partially dependent on their family financially. Among the Non Tobacco Consumers 68.53% are financially dependent on their family whereas only 17.48% are independent and the rest 13.99% are partially dependent on their family for their financial needs. In contrast to the Non-Tobacco Consumers who are financially dependent, the Active Tobacco Consumers and Past Tobacco Consumers are slightly less dependent financially on their families. Only 59.49% of Active Tobacco Consumers and 58.54% of Past Tobacco Consumers have revealed that they are financially dependent on their families.

Table 5: Test of Association between Financial Dependency and Tobacco User Category

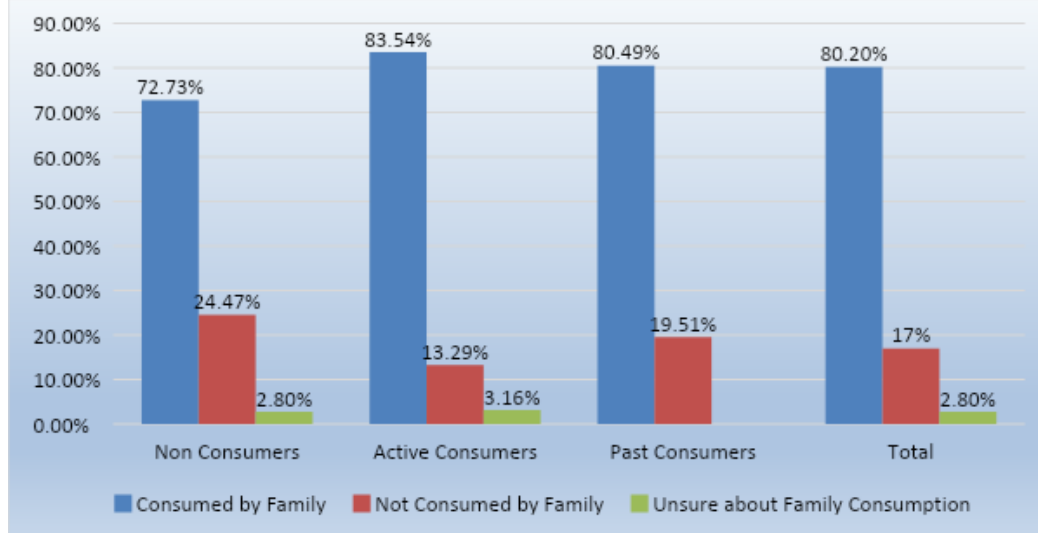
Test	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)
<b>Pearson Chi-Square</b>	4.887 <sup>a</sup>	4	.299	.300
<b>Fisher's Exact Test</b>	5.072			.278
<b>N of Valid Cases</b>	500			
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.46.				
b. The standardized statistic is 1.951.				

There may be a slight tendency among the respondents who are less financially dependent on their families to feel free to buy and consume tobacco products. However, the Pearson Chi-Square Test (Table 5) shows a significant level of 0.300 i.e. ( $p > 0.05$ ), indicating a non-significant association between tobacco user category and their status of financial dependency.

### Comparison of Tobacco Consumption in Family

There are many external factors such as family, friends and the general society which influences people's consumption behaviour. Studies have found that parents and peers have strong influence on youth tobacco use (Agaku & Ayo-Yusuf, 2014; Dhekale, Gadekar & Kolhe, 2011); Katulanda et al., 2015; Mishra et al., 2005; Corona et al., 2009). Ladusingh, Dhillon & Narzary, 2017) found that the likelihood of using tobacco is 3.4 and 1.14 times more, respectively, for youths staying with mothers and fathers who use tobacco, in comparison to youths staying with parents who do not use tobacco.

Figure 6: Comparison of Family Tobacco Consumption between Tobacco User Categories



Source of Data: Field Study

Out of all the respondents, 80.2% have confirmed that one or more members in their family consumes tobacco whereas only 17% of the respondents confirmed that none of their family members consumes tobacco and rest 2.8% of the respondents were unsure about tobacco consumption by any of their family members. Among the Non Tobacco Consumers, 72.73% have confirmed that they do have family members who consume tobacco whereas 24.47% of them confirmed that they do not have members in the family who consumes tobacco. On the other hand, 83.54% of the Active Tobacco Consumers and 80.49% of the Past Tobacco Consumers says that they have members in the family who consumes tobacco and only 13.29% of Active Tobacco Consumers and 19.51% of Past Tobacco Consumers says that they do not have members in the family who consumes tobacco.

The tobacco consumption in the family members of both Active and Past Tobacco Consumers are comparatively higher than the tobacco consumption in the family members of Non Tobacco Consumers. The Fisher's exact test (Table 6) also indicates a significant (0.042) p value (i.e.  $p < 0.05$ ), therefore, there is a significant association

between tobacco consumption in the family and tobacco user category. So, it may be concluded that tobacco consumption in the family does have an influence on undergraduate student's choice of tobacco consumption

Table 6: Test of Association between Family Tobacco Consumption and Tobacco User Category

Test	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
<b>Pearson Chi-Square</b>	10.145 <sup>a</sup>	4	.038	.038
<b>Fisher's Exact Test</b>	9.370			.042
<b>N of Valid Cases</b>	500			
a. 2 cells (22.2%) have expected counts less than 5. The minimum expected count is 1.15.				
b. The standardized statistic is -1.944.				

### Conclusion

Some prior studies have shown that there is a strong link between many socio-economic factors with tobacco consumption. The present study explored the level of significant association between five socio-economic factors (family size, relationship status, family income, family occupation, financial dependency and tobacco consumption in the family) and tobacco consumption by undergraduate students in Pachhunga University College and Government Saiha College in Mizoram. It has been found that there is no significant association between the respondent's family size, relationship status, family income, family occupation and financial dependency with respondent's tobacco consumption status. Hence, these socio-economic factors are not a determining factor for tobacco consumption by the undergraduate students. However, there is a significant association between tobacco consumption in the family of the respondents and the respondent's personal tobacco consumption status. So, it can be concluded that consumption of tobacco by own family members may have influenced many undergraduate students in Mizoram to consume tobacco themselves. Family should be regarded as one of the most important support system for students especially at stages when they are transitioning from adolescence to adulthood. There is a need for creating greater awareness especially for families in Mizoram regarding responsible tobacco use to protect the health and wellbeing of their younger generation.

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