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The Effect of Price and Non-Price Factors on the Alcoholic Beverage Consumption of Millennials in the City of Caloocan

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ABSTRACT

The study examined the impact of excise tax (price factor), alcohol sales restrictions, media advertisements, and health warning labels (non-price factors) on the alcoholic consumption of millennials in Caloocan City, Philippines. The study identified whether such factors imposed and used significantly reduce alcohol use among millennials. Previous empirical research shows that all factors have either increased or decreased alcohol use. Nevertheless, excessive consumption of alcohol leads to various negative externalities which cause harmful impacts on a household or a community. The study identified if the price and non-price factors were effective approaches or strategies for controlling the consumption of alcoholic beverages. The study used regression analysis through Ordinary Least Squares to analyze the data gathered through a survey. The findings of the study showed that imposition of excise tax and placing health warning labels has a statistically significant effect on reducing alcohol use. Meanwhile, sales restrictions and media advertisement does not have a significant impact. Furthermore, the study recommends that policymakers impose a higher excise tax rate and place health warning labels on alcohol containers to reduce its consumption and lessen its related harms among individuals and their surroundings.

KEYWORDS

Alcohol consumption, excise tax, sales restrictions, media advertisement, health warning labels

1. Introduction

According to the 2018 Family Income and Expenditure Survey (FIES), Filipino families spent a massive PHP 354.341 billion on alcoholic beverages. Moreover, various factors have been emphasized within the individual and the societal levels, affecting the levels and patterns of alcohol use and the magnitude of negative externalities brought by alcohol in the population (World Health Organization, 2018). A wide array of studies has determined alcohol use as one of the primary factors that cause negative externalities. Such negative societal externalities include

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violent crimes, sexual assaults, domestic violence (Heinz et al., 2011), road traffic accidents, poisoning, falls, drowning, and other unintentional injuries (WHO, 2018). Valbuena (2006) identified that cases of drug and sexual abuse, suicide, and violence among Filipinos is usually caused by drunkenness or excessive alcohol intoxication. Social and mental health risks are dominantly prevalent due to the intoxication of alcohol. It leads to chronic diseases, memory, and social relationship problems, miscommunication, anxiety, and depression (Center for Disease and Control, 2022). In the Philippines, WHO 2018 *Global Status Report on Alcohol and Death* identified that 21 to 1 death per 100,000 men are caused by liver cirrhosis due to alcohol use, and 136 deaths per 100,000 men are caused to cancer. To combat the adverse effects of alcohol, national and local government units intervene to control the excessive use of alcohol among individuals and reduce its dangerous personal and societal impact.

Excessive alcohol consumption has various economic consequences. According to Bouchery et al. (2011), excessive consumption of alcohol leads to productivity losses such as early mortality; reduced productivity both at home and workplace, crime (loss of available workdays among victims, and lost of productivity from imprisonment); fetal alcohol syndrome and work-related absenteeism. In addition, Jyani et al, (2019) concluded that such excessive consumption causes a loss on a country's quality-adjusted life years (QALYs) due to health consequences associated with such consumption. Such loss affects the country's labor market and human capital in the short-run and long-run. Furthermore, Casswell and Thamarangsi (2009) identified that global evidence shows that high- and middle-income countries always spend more than 1 percent of their annual Gross Domestic Product (GDP) on economic costs associated with alcohol. From a microeconomic perspective, addictive alcoholic behavior violates the assumption of rational consumer behavior since the alcohol addict may get limited or no utility from consuming alcohol, nonetheless, will continue to do so (Thavorncharoensap et al., 2009). Moreover, excessive alcohol use leads to higher healthcare system costs and out of the pocket expenses for the treatment of alcohol-related diseases. In the Philippines, Rehm et al., (2009) estimated that alcohol product consumption's economic cost to the Philippine economy is about PHP211 billion by 2020. Therefore, identifying which price and non-price factors strongly control and lessen the excessive consumption of alcohol among individuals would help the economy in terms of productivity, efficiency, human capital, and economic growth.

Government interventions in alcohol use include the imposition of additional tax, sales hours and quantity restrictions, health warning labels, and limitations on media presence of alcohol. Policymakers utilize the placing tax on alcohol to directly control the consumption of their citizens (WHO Regional Office for Europe, 2018). Xu and Chaloupaka (2011); van den Berg et al. (2008); and Mongan (2012) identified that increasing the tax on alcoholic beverages could be

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a highly effective policy tool for reducing alcohol-related harms and its consequences. The empirical study by Farrell, Manning, and Finch (2003) and Kumar (2017) estimated that demand for alcohol is negatively associated with its price. A wide range of empirical studies consistently exhibits a positive relationship between the price of alcohol and its quantity consumed (Gallet, 2007; Wagenaar, Salois, & Komro, 2009; Fogarty, 2010; and Meng et al., 2014). However, the magnitude of reduction differs considerably. The effect of excise tax on the alcohol consumption of millennials has a relatively limited study in the Philippines. Currently, the Philippine government is imposing a USD0.91 per proof liter sin tax for distilled spirits and a USD0.68 per proof liter sin tax for beer and other fermented products above the cost price, which will continue to increase by 6 percent in the succeeding years beginning 2025. Among its ASEAN peers, 65 percent ad valorem sin tax for beer is imposed in Vietnam and 15 percent ad valorem sin tax for beer in Malaysia.

Limiting the alcohol sales hours and restricting the quantity of alcohol an individual can buy remains one of the strategies to reduce excessive alcohol consumption (Community Preventive Services Task Force, 2010; Kypri et al., 2011; Papova et al., 2009). Wilkinson, Livingston, and Room (2016) and Baumann et al. (2019) concluded that substantial evidence shows the effectiveness of restricting late alcohol sale hours in reducing late-night harms due to alcohol use. Popova et al. (2009), in general, identified that limiting the alcohol availability is an effective tool to prevent harms attributed to alcohol use. In terms of consumption, Yörük (2013) highlighted that states in United States of America that revoked their Sunday alcohol sales laws (a law that restricts the hours of selling alcohol) saw a 2.8 percent increase per individual demand for alcohol. Decreasing the stores that sells alcohol also leads to decreased per capita demand for alcoholic beverages (Sherk et al., 2018). In the Philippines, liquor restrictions were imposed as a measure to control the negative consequences of such use on the important and consequential events within the community or the country.

Clarke et al. (2020) stated that placing health warning labels (HWLs) imparts details that shows the possible adverse health risk of excessive consumption of a certain product. The evidence of the effectiveness of placing HWLs on alcohol bottles, packaging, and other mediums and their impact on consumption is limited (Clarke et al., 2020). Initial evidence from Mantazari et al. (2018) and Reynolds et al. (2019) identified that putting these labels on such products has a relatively acceptable view to the general public. On top of that, Cho et al. (2018) and Brewer et al. (2019) concluded that HWLs creates negative emotions such as worry, disgust, and fear which increases the chances of quitting attempts. Given this result, utilizing HWLs on alcoholic beverages in the Philippines has been proposed in the legislature. Yet, no laws had been signed into the law mandating the use of HWLs. However, the impact of HWLs on alcohol with

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graphic warning on its consumption, has yet to be quantitatively synthesized, which is a factor in enabling a vigorous estimate of the effects on these possible outcomes (Billich et al., 2018; Stafford & Salmon, 2017). HWLs in the Philippines were customary seen on tobacco packaging and not on alcohol products.

Petticrew et al. (2016) identified that alcohol campaigns are commonly aimed to target young adults, with a short-term objective of increasing sales within these demographic and longer-term objectives of developing user identification with brands and products. (Stautz, 2009; Wind & Sharp, 2009). Empirical studies conducted by Brown et al. (2016), Jones and Magee (2011), and Stautz et al. (2016) suggest that there is a correlation between alcohol advertisement and an increase in the consumption of alcoholic drinks by the viewers, especially those who have a history in heavy drinking, moreover Atkin et al. (1983) concluded that traditional media advertising for alcohol brands plays an important role in forming young adult's attitudes and behaviors on excessive and hazardous alcohol use. Due to the entrance of new digital platforms for alcohol media advertising like social media applications and the internet, which is a popular avenue for the millennials, alcohol consumption could be influenced by various types of advertisements being promoted on various platforms. However, traditional media like television, radio, billboard, poster, etc. remains relevant in influencing consumption

The study opted to focus the study on millennials since the said generation has a relatively higher expenditure on alcohol compared to other generations (Murray, 2020). Since the said generation has the highest expenditure, it means that their consumption is much greater and hence it might lead to higher economic costs and negative externalities. In addition, the said age group was more inclined in forming a family and producing children. Hence, the various costs and externalities of alcohol use might be greater in the said age group since they are raising a child which could affect the economic and social future of the country.

The study will examine the actual influence and effect of price and non-price factors on the overall use and consumption of alcoholic beverages. To determine such effects, the study will solely focus on the imposition of excise tax for the price factor and policies on sales restrictions, health warning labels, and alcohol advertisements and media for non-price factors. Moreover, the City of Caloocan was chosen as the locus of the study primarily due to the level of poverty that exists in the city. Furthermore, this study will identify if the increase in the price of alcohol has a substantial impact on the demand for alcohol and if the non-price policies significantly decrease alcohol use among the said generation. Identifying which factor has the most influence in reducing alcohol consumption will aid policymakers in which tool must be strengthened and-utilized. The study will assess the results gathered from the survey conducted online using various- econometric tools and methods to identify the behavior. The price and non-price factors

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influencing the alcohol use of Filipinos has limited empirical studies and hence, the results would inevitably contribute to the limited domestic literature regarding alcohol consumption among Filipinos.

2. Review of Related Literature

2.1. Price Factor

2.1.1. Excise Tax and Consumption of Alcoholic Beverages

The imposition of higher and additional taxes on top of the basic market selling price of alcoholic beverages has become one of the primary policy tools that various governments did utilize to discourage the consumption of alcoholic beverages among their citizens and reduce negative externalities (Sornpaisran, 2019). Price regulation is often recognized as one of the most efficient tool for reducing alcohol consumption (Babor et al., 2010; Treisman, 2010; WHO, 2010). A vast body of literature established the inverse relationship between consumption and price of alcoholic beverages. Vast empirical studies provided consistent evidence that higher alcohol prices due to higher excise tax are associated with the decrease in both excessive alcohol use and its related harms. Studies conducted by Daley et al. (2011), Elder et al. (2010), Esser et al. (2016), Gehrsitz, Saffer, and Grossman (2021), Jiang et al. (2016), Stockwell et al. (2011), Task Force on Community Preventive Services (2010), and Wagenaar, Salois, and Komro (2009) proved the high price elasticity of alcoholic beverage demand.

Adams and Effertz (2010) revealed that a demand elasticity of −0.46 for beer, −0.69 for wine, −0.8 for spirits, and a sum value of −0.28 for the demand on heavily addicted people are discovered in Germany. Hence, an increase in price by 1 percent will lead to a fall in demand for beer by 0.46 percent or by 0.8 percent for spirits. Overall, Chaloupka, Powell, and Warner (2019) concluded that the price elasticity of demand for alcohol in Rich Countries falls within −0.51 and −0.77 and median on −0.64 in Low Middle-Income states. However, it is noteworthy that published price elasticity estimates of demand for alcohol differs vastly due to the different approaches utilized and the econometric complexities associated with the analysis.

Furthermore, various empirical studies have shown that a decrease in the price of alcoholic beverages due to tax reduction is associated with increased alcohol use. Such studied included Anderson and Baumberg (2006), Cook et al. (2011), and Makela and Osterberg (2004). It is sure enough due to the law of demand (Hicks, 1956), almost every increase of taxes on goods leads to a decrease in demand, with only infrequent exceptions, the Giffen goods (Jensen

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& Miller, 2008). Kenkel (2005) finds that in all cases of increase on excise tax rate, the burden was more than fully passed towards the end consumers.

It is also evident that increased alcohol consumption may lead to negative externalities. The primary externality of excessive alcohol consumption is the different complications on an individual's general physical health. According to Therapondos, Delahooke, and Hayes (1999), excessive consumption of alcohol has adverse effects on the cardiovascular, musculoskeletal, hemopoietic, and neurological systems and psychosocial aspects. In addition, there is enough evidence that the use of ethanol alcohol is associated with non-linear externalities (Griffith, O'Connell, & Smith, 2018). Additionally, the same study had concluded that different tax rates across various types of alcohol could lead to significant welfare gains compared to an optimally set single ethanol tax rate. Welfare gains from optimally differing rates are higher the more concentrated externalities amongst heavy alcohol users (Griffith, O'Connell, & Smith, 2018).

Governments have long utilized taxation to rectify the overconsumption of alcoholic beverages. Pigou (1920) noted that imposing a tax equal to the marginal external costs of consumption makes it possible to entirely correct the externality. However, Griffith, O'Connell, and Smith (2017) noted that taxation is only one public tool available to governments to lessen the negative externalities of excess alcohol consumption. Accordingly, O'Donoghue and Rabin (2006) found out that a superior policy instrument on- the over-consumption of alcoholic beverages would be to impose quantity restrictions. In contrast, Gruber and Koszegi (2002) found that taxes can be used as policy tool for consumer behavior without threatening consumer sovereignty.

2.2. Non-Price Factors

2.2.1. Alcohol Advertisements and Consumption of Alcoholic Beverages

Another non-price factor relevant to the study is the influence of alcohol advertisement on the consumption of alcoholic beverages; policymakers delve into this sector and see if they can utilize the use of advertisement, may it be on television, newspapers, and social media platforms, to gauge and control the consumer's consumption of alcoholic beverages. Alcohol advertising has generated widespread and intense controversy in recent years. Social critics have attributed significant harmful effects to mass media advertising of beer, wine, and distilled spirits, and such advertising has been banned or restricted in many countries (Atkin & Block, 2015). Empirical studies from Atkin (1990), D. Russell & C. Russell (2008), Naimi et al. (2016),

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Noel et al. (2020) supported the claim that exposure to traditional (newspapers, billboards, magazines, broadcast and cable televisions) and non-traditional alcohol advertisement (social media advertisements, YouTube advertisements and other advertisements not considered traditional such as stunts and gimmicks from alcohol companies) would result to higher alcohol consumption.

Nowadays, companies and marketers of alcoholic beverages such as Diageo, Smirnoff, and Jack Daniels are thinking of new and innovative ways to promote their alcoholic beverages. Social media marketing of Diageo, Smirnoff, and Jack Daniels have been creative in their presence on Facebook as part of wider participatory and branding activities (Carah & Hernandez, 2014) and are likely to encourage consumption through new forms of promotion, taking advantage of networked peer-group friendship practices, and perceptions of individual behavior (Niland et al. (2016). Alcoholic advertisements are more likely to target young consumers. Previous studies shown how alcohol producers, such as the mentioned brands Diageo, Smirnoff, and Jack Daniels, strive to interact with young audiences to increase the visibility of the brand in everyday conversation and to create "toxigenic digital spaces," where alcohol use is being normalized (Katainen et al. (2020). Kellershon (2018) found that consumers demand ever-increasing personalization in their goods, eco-sensitivity, convenience, and authenticity. E-commerce swiftly becoming an important marketing channel, requiring timely strategies, thereby stating that advertisement indeed plays a significant role in consumer consumption of alcohol and the more "trendy," innovative. Unique advertisement is the more likely consumer will opt to consume certain alcoholic beverages.

Lillard, Molloy, & Zan (2018) found that men ages 18–24 see significantly more advertisements for beer and distilled spirits than similarly aged women. Some of the difference is linked to sex differences in media consumption. Some of the advertisements also reintegrated a link between alcohol use and acceptance by its friends, especially men being accepted by their men mates. While some of the advertisements were seen to be delivery messages of excessive drinking, links with heavy drinking may also have been present in more minor direct ways via associations with macho masculinity (Wyllie, Zhang, Casswell, 1998); this suggested that no single form of advertising dominates for all, men exposed to alcohol advertisement that portrays masculinity might increase their consumption of alcoholic beverages, while women exposed to more feminine alcoholic drinks advertisements might increase their consumption of alcoholic beverages, while these statements might not work for all because different individuals have different preferences, this just alludes that we can associate the increase of alcoholic drinks consumed on the individual's exposure to alcoholic advertisements. While advertisement does affect one's consumption, there will always be psychological reasons why it affects so. Exposure

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to alcohol advertisements influences a host of psychological processes, some operating at the individual or intrapersonal at the social or interpersonal level. Hence, changes on these processes affect the likelihood that adolescents will initiate and maintain alcohol involvement. Moreover, in some cases, there is evidence for a reciprocated relationship, such that alcohol involvement influences preferences for or likelihood of exposure to alcohol-related media content (Jackson & Bartholow, 2020)

Lastly, exposure to media that promoted the culture of drinking alcoholic beverages, as cited and stated in the paragraphs above, media (traditional and non-traditional) that portrays and promotes warnings regarding overly drinking alcohol seemed to be effective as well on the consumer's behavior (on their consumption of alcoholic beverages). Alcohol warnings may have the long-term potential to influence beliefs regarding the risks and benefits of alcohol use, even among persons who believe alcohol use is mainly beneficial and low in risk. Warnings might, over time, influence the beliefs and behavior of even resistant audiences: Warnings seem to be capable of diminishing confidence in pro-alcohol ideas and perhaps of reducing positive responses to beer advertisements (Slater & Domenech, 2015).

2.2.2. Alcohol Sales Restrictions and Alcohol Consumption

National laws and local ordinances aim to limit the hours of a day or days of a week on which alcoholic beverages may be sold and consumed may be a tool to reduce excessive alcohol consumption. However, numerous studies conducted in the West showed that the imposition of sales restrictions leads to higher consumption of alcoholic beverages. Based on the study conducted by Yörük (2014), the states of Pennsylvania, Delaware, and New Mexico experienced a substantial increase in overall alcohol consumption after the imposition of Sunday alcohol laws. Over and above that, the repeal of Sunday sales restrictions in Canada was unlikely to increase overall alcohol consumption (Carpenter & Eisenberg, 2009). The same study also found that there is a substitution away from drinking on Saturdays, and lifting such restriction shows no evidence for increases in overall drinking. However, Middleton et al. (2010) identified that limiting alcohol availability through the current days of the sale in the countries specified in the study is an effective policy for preventing excessive alcohol consumption and occurrences of its related harms.- At the same time, Karpuškienė (2021) found that alcohol sales restriction policies, equipped with a favorable public attitude and acceptance, may have influence alcohol consumption and individual consumption patterns.

The availability theory in alcohol research literature states that increased availability of alcohol will lead to increased consumption and consequently more harm. Kolosnitsyna, Sitdikov,

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and Khorkina (2014) identified that the amount of individual intake of alcohol is directly correlated with the number of hours when selling of alcohol are permitted. The same study also found that not only is alcohol use is influenced by the number of restricted sales hours but also the time when alcohol sales start and end. In addition, Hahn et al. (2010) showed evidence that increasing the sale hours of alcoholic beverages by 2 (two) or more hours increased alcohol-related harms.

In terms of the substitution effects, Kwapisz and Kubien (2011) and Skorobogatov (2014) found that the substitution effect is present when certain alcohol restrictions are imposed. Contrarily, Kolosnitsyna et al. (2014) and Carpenter and Eisenberg (2007) found that there is no significant evidence of substitution effect on alcoholic beverages when alcohol restrictions were imposed on Russia and Canada, respectively. Moreover, Ogilvie (2017) found that the imposition of physical and social restrictions on alcohol in Alaska results in the seeking of intoxication by other means, many of which are more dangerous than the impact of unrestricted access on alcohol.

2.2.3. Health Warning Labels (HWLs) and Consumption of Alcoholic Beverages

The imposition of health warning labels is one of the non-price-related strategies that policymakers use to influence the alcoholic consumption of its citizens. Several studies in other countries have investigated the HWLs and their correlation to an individual's consumption and buying behaviors. According to Wigg & Stafford (2016) and Attwood et al. (2018), pictorial health label warnings were associated with significantly higher arousal of one's fear, increased thoughts on the health risks associated with consuming alcohol, and higher intentions to reduce consumption and quit alcohol. Text-health warnings were also influential in slowing down one's consumption of alcohol (Stafford and Salmon, 2016). However, Hammond (2007) identified that larger HWLs with pictures of tobacco products are significantly more effective than smaller, in text-only messages. He also noted that HWLs on packages are among the most straightforward and prominent means of communicating with tobacco users. Studies from Al-hamdani & Smith (2015), Stafford, Wigg, & Salmon (2016), McKinnon et al. (2001), and Wilkinson & Room (2009) revealed that enforcement of HWLs in its respective location of study is effective in informing and reminding consumers of the risks associated with alcohol consumption and eventually reducing consumption. Despite that, evidence shows that the influence of HWLs is,not only determined by the general nature of its graphic design and the content of the message but also by the strictness of its enforcement and regulation (Morgenstern et al., 2021).

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Furthermore, some findings conducted outside of the Philippines showed the ineffectiveness of HWLs on containers in affecting and influencing the risk perceptions and consumption of an individual in Australia (Coomber et al., 2015). According to Kersbergen & Field (2017), users of alcohol give minimal attention and importance to HWLs on alcohol containers, and even if their attention is directed to these warning labels, this has no substantial influence on their drinking intentions. Hobin et al. (2020) disclosed that strengthening the health warning messages on alcohol container labels shows to change how drinkers attend to, process, and behaviorally respond to the information on the labels. Text-only HWLs on alcohol containers were ineffective in changing perceived personal risks and motivation to drink less among adult consumers (Kokole, Anderson, and Llopis, 2021). Text-only HWLs on tobacco products in China also did not lead to significant impact in most of the critical indicators of health warning effectiveness (Marshall et al., 2015) same result was found in Lao PDR (Sychareun et al., 2015). Babor et al. (2010) also identified that there is little to no evidence exhibiting the impact of HWLs and signs on one's drinking behaviors when implemented alone.

Regarding acceptance of HWLs as a possible policy intervention on alcohol consumption, Staub & Siegrist (2022) found that alcohol risk awareness did not increase when alcohol containers included an HWL but were determined by the type of alcoholic beverage that the consumers considered drinking. HWLs were seen as less effective in decreasing alcohol-related harms and other costs. Burton et al. (2017) identified that the HWLs imposed in drinking environments lead to small reductions in acute alcohol-related harm. However, Kaskutas & Greenfield (1992) discovered that HWLs increased conversations regarding the health risks of alcohol and were associated with slightly decline on likelihoods of drinking and driving (Greenfield, 1997).

3. Research Method

3.1. Research Design

The research design used in the study is quantitative and cross-sectional in nature, wherein the data is collected from several various individuals at a single point in time. The said research design is used in multiple studies investigating and examining the relationship between alcohol consumption and price and non-price factors. For price factors, a similar study by Grittner, Gustafsson, and Bloomfield (2009) employed a quantitative cross-sectional study using the data generated from a national survey of the population of their respective locus to examine the changes in individual consumption. For non-price factors, such as sales restrictions, media advertisements, and health warning labels; Carpenter and Eisenberg (2009); Critchlow et al.

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(2018); Wang et al. (2021), respectively, used a standard quantitative cross-sectional study as one of their fundamental design. This study utilized various statistical software as their primary statistical tool to perform the following economic models, statistical tests, and analyses needed for their studies. Moreover, various studies applied multiple regression analysis tests and techniques to thoroughly understand the relationship between the variables and models involved in their respective studies.

3.2. Subjects

The sampling method employed in the study was the purposive sampling technique. The said technique was defined by Etikan, Musa, and Alkasim (2015) as a choice of a participant due to the specific qualities the participant possesses. It is a nonrandom technique that does not requires underlying theories or a set number of participants. Moreover, the rationale behind using the said technique was to focus on certain characteristics of a population of interest, which will be the most equipped to answer the research questions (Rai & Thapa, 2015). The study was conducted during February until November of 2022 where the Philippines is under various mobility and economic restrictions brought by the efforts of the government to curb the spread of COVID-19.

Furthermore, the purposively selected participants for the study were classified as millennials consuming alcoholic beverages and possess the following criteria: First, a respondent has to be between 26 to 41 years of age. Second, respondents must reside within the City of Caloocan. Third, sex (either male or female). Lastly, they consume alcohol or have knowledge about it. This study selected the defined millennial age bracket based on the Pew Research Center's examination of their previous studies. Dimock (2019) identified that anyone born between 1981 and 1996 (ages 26 to 41 in 2022) is considered a millennial.

The sample size was derived using the Raosoft (2004) online sample size calculator constructed. The calculation was based on a 95 percent confidence level with a 5 percent margin of error and 50 percent response distribution.

Locus of the Study	**Total Population of Millennials (26 - 41 years old)**	**Confidence Level**	**Margin of Error**	**Response Distribution**	**Sample Size *(n)***

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	(2015)				
City of Caloocan	397, 621	95%	5%	50%	**384**

3.3. Locus of the Study

This study have chosen the local City of Caloocan as the locus of the study since it has the highest poverty rate incidence in National Capital Region (NCR). According to the official 2018 Poverty Statistics of the Philippine Statistics Authority (PSA), the city has a total population of 1.6 million and has the highest poverty incidence in NCR at 4.7%. Mckinney et al. (2012) found that poverty was positively associated with both excessive drinking and alcohol-related problems among men who drink. Poverty was inversely related with excessive drinking and alcohol-related problems among women partners who drink. Men who drink and lives in impoverished district may drink more excessively than men who resides in a more affluent areas as a palliative getaway from a stressful living condition. In contrast, women living in marginalized communities may have different caretaking responsibilities and may subscribe to cultural norms that make the frequency of excessive drinking lower than that found among female counterparts in affluent areas. Other norms and attitudes concerning alcohol consumption as well as coping mechanisms for stress-related poverty may also differ for men and women. (Jones-Webb et al. 1997). Fitzgerald and Zucker (2021) concluded that there were direct correlations between the rates of alcoholic families and the percentage of families living below the poverty line. The PSA's 2015 Total Population by *Age, Group, and Sex* data, shows that there is a higher number of males than females residing in the city, making it more fitting to conduct a study and to advance the knowledge regarding various economic behavior of individuals residing in the said city. The chosen locus of the study would suffice the information and data needed to be acquired since it comprised a significant number of millennials residing in the said city.

3.4. Data Instrument

This study opted to utilize primary data collection for gathering data for the study. A survey questionnaire includes standardized questions that operationalize the measurement constructs. The goal is to present a uniform stimulus to respondents to compare their responses (Martin, 2006). The research variables would generate the indicator regarding the influence on the association between the independent and dependent variables. Furthermore, the data instrument was constructed by adapting a questionnaire produced by the World Health Organization for the non-price factors aspect of the instrument. The data instrument includes a series of questions regarding the following information: respondent's demographic profile,

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general alcohol consumption, views and knowledge on the excise tax, media advertisements, imposition of sales restrictions, and the existence of health warning labels. The instrument domains, variables, and measures in this study are shown in Table 1 in the appendix section.

3.5. Data Collection Procedure

The data was primarily collected and sourced through the issuance of online questionnaires to the respondents. The respondents need to have internet access, an active email address, and a device that includes a web browser. The operational and specific measures of the variables needed in the study are included in the data instrument. It consists of the socio-demographic profile of the respondents, general alcohol consumption, and change in alcohol consumption brought by price and non-price factors included in the data instruments of the study. Moreover, participants will be exhaustively informed regarding the nature of the study by providing the background, objectives, and ethical considerations of the study concisely through the utilization of various social media platforms, email, and other modes of communication.

3.6. Ethical Considerations

All of the responses and information of the participants would remain highly confidential and anonymous, respectively. The data collected were treated as extremely private and hence safeguarded in accordance with Republic Act 10173 or the "Data Privacy Act of 2012." Additionally, participation in this study is voluntary. Participants were not forced or coerced to participate. Participants were given informed consent and were treated fairly, equally, and nobly during the entire course of the study. The data instrument used sought an ethics review from the Philippine National University's Educational Policy Research and Development Center to ensure that ethical standards were upheld and participants would not experience any harm. The participants were assured that the first- hand data collected from them would not be used for any other purpose aside from the development of the study. The informed consent form is attached on the front page of the questionnaire to ensure that respondents are well informed regarding the study and that consent has been secured before they participate in the research. If the respondent clicked 'no' on a certain question under the consent form, they were automatically opted out for the study.

3.8. Mode of Analysis

Data cleaning and checking to ensure the quality of the data. Regression analysis estimates the relationship between the dependent variable and independent variables. The Ordinary Least Squares (OLS) regression model has been taken statistical tool for data analysis.

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To check the efficiency and unbiasedness of the estimated coefficients of the OLS regression model the following tests had been applied:

(1) Durbin-Watson statistic identifies if there is no autocorrelation error (Durbin & Watson, 1950):

$$DW = \frac{\sum_{t=2}^{n}(\hat{u}_t - \hat{u}_{t-1})^2}{\sum_{t=1}^{n}\hat{u}_t^2}$$

where $\hat{u}_t$ represents the OLS residuals and *n* represents the sample size. It also represents the ratio of sum squared differences in successive residuals to the residual sum of squares. Also note that the DW value always lies between 0 and 4.

(2) White's Test is a test used to test the presence of heteroscedasticity error. The said test has six more regressors compared to Breusch-Pagan-Godfrey test (Woolridge, 2016).

$$u_t^2 = \delta_0 + \delta_1 x_{t1} + \delta_2 x_{tk} + \delta_3 x_{tk} + \delta_4 x_{tk} + \delta_5 x_{tk} + \delta_6 x_{tk} + \delta_7 x_{tk} + \delta_8 x_{tk} + \delta_9 x_{tk} + error.$$

(4) Breusch-Pagan-Godfrey test is utilized to test the heteroscedasticity of errors in regression (Breusch & Pagan, 1979):

$$u_t^2 = \delta_0 + \delta_1 x_{t1} + \ldots + \delta_k x_{tk} + v_t$$

where the null hypothesis is $H_0: \delta_1 = \delta_2 = \ldots = \delta_k = 0$. For the F statistic—with $\hat{u}_t^2$ replacing u_t^2 as the dependent variable—to be valid, we must assume that the errors $\{v_t)$ are themselves homoscedastic (as in the cross-sectional case) and serially uncorrelated (Woolridge, 2016).

(5) Ramsey's Regression Equation Specification Error Test (RESET) is used to detect if there is a significant non-linear relationship in the Linear Regression Model (Ramsey, 1969):

$$y = \beta_0 + \beta_1 x_1 + \ldots + \beta_k x_k + u$$

where β_0 represents the y-intercept parameter, β_1 , β_k is the slope paremter, x_1, x_k represents the independent variables, and u represents the other variables not included.

(6) Normality of Residual test which identifies if the underlying residuals are normally distributed.

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3.7.1 Econometric Model

The dependent variable of the study is the alcohol consumption, while excise tax, alcohol media advertisements, sales restrictions, and health warning labels are the independent variables:

$$AC = \beta_0 + \beta_1 ET + \beta_2 MA + \beta_3 SR + \beta_4 HWL + e$$

Where the dependent variable AC represents the alcohol consumption and β_0 represents the alcohol consumption intercept parameter. Meanwhile, $\beta_1, \beta_2, \beta_3, \beta_4$ represents the slope coefficient of the independent variables. The independent variables: Excise tax is represented by ET; media advertisement is represented by MA; sales restriction is represented by SR; and health warning labels is represented is HWL. Lastly, the error term which includes the other independent variables excluded in the study is represented by e.

4. Results and Discussion

This study is designed to identify the effect of the independent variables; excise tax and various non-price factors, such as media advertisement, sales restrictions, and health warning labels, on the dependent variable; the alcohol consumption of millennials residing in the City of Caloocan. The empirical results were gathered through the issuance of an ethically approved questionnaire from the first week of September until the second week of November 2022 to relevant subjects on the identified locus. The data gathered were critically analyzed and interpreted using econometric tools such as Descriptive Statistics, Ordinary Least Squares, and Basic Regression Analysis.

4.1. Empirical Results

This study utilized the Ordinary Least Squares method to perform specific regression analysis tests and to derive the necessary regression results. The summary of the regression analysis is presented on Table 1.0.

Table 1.0. Regression Analysis Result

Dependent Variable: Alcohol Consumption ($\boldsymbol{AC}$)

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Independent Variables	Coefficient	Standard Error	t-ratio	p-value
Constant	0.708046	0.544657	1.300	0.1944
Excise Tax (***ET***)	0.263994	0.144835	1.823	0.0691*
Media Advertisement (***MA***)	0.129924	0.113275	1.147	0.2521
Sales Restrictions (***SR***)	0.0778763	0.111500	0.6984	0.4853
Health Warning Labels (***HWL***)	0.356980	0.116457	3.065	0.0023***

Additional Ordinary Least Squares Values	
Measurements	Values
R-squared	0.044070
Adjusted R-squared	0.033791
F(4,380)	4.287474
P-value(F)	0.002103

Statistical Tests Results	Normality of Residual	Breusch-Pagan Test	White's Test
Null Hypothesis	error is normally distributed	heteroskedasticity not present	heteroskedasticity not present
Test Statistic	Chi-square(2) = 5.85354	LM = 1.82355	LM = 11.4629
With P-value(F)	0.0685258	P(Chi-square(4) > 1.82355) = 0.768171	P(Chi-square(14) > 11.4629) = 0.64935

The coefficient column in Table 1.0 showed the relationship between the price and non-price factors and the alcohol consumption among millennials residing in the City of Caloocan. The first independent variable, the imposition of excise tax, has a positive impact on reducing the amount of alcoholic beverage consumption. The said variable has a p-value of 0.0691, considered significant since it is less than 0.10 alpha. The positive impact of excise tax in decreasing the level of alcoholic beverage consumption has also been found in the empirical studies of by Daley et al. (2011), Elder et al. (2010), Esser et al. (2016), Gehrsitz, Saffer, and Grossman (2021), Jiang et al. (2016), Stockwell et al. (2011), and Wagenaar, Salois, and Komro (2009).

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The regression analysis for the second independent variable found that both engaging and non-engaging traditional and non-traditional media advertisements positively correlated with alcohol consumption among millennials. Either traditional or non-traditional, aims to entice its target audience to consume an alcoholic beverage. However, the p-value of the said variable is considered insignificant since 0.2521 is not less than the alpha values. Moreover, the positive impact of advertisements on increasing alcohol consumption is consistent with the studies conducted by Atkin (1990), D. Russell & C. Russell (2008), Naimi et al. (2016), and Noel et al. (2020).

The results for the third independent variable, the imposition of alcohol sales restrictions by increasing the restriction hours in the sale of any alcoholic beverages, showed that such policy has a direct influence in lowering the alcohol consumption among the defined subjects within the specified locus of the study. Nonetheless, the said independent variable has an insignificant value of 0.4853, greater than the alpha values. The result of such analysis is the same as the findings of Middleton et al. (2010), Karpuškienė (2021), Theron et al. (2022), and Midford (2010).

Lastly, the presence of health warning labels (HWLs) on alcohol packaging, either text or pictorial, has a positive impact on reducing alcohol consumption based on the regression analysis findings. The said independent variable is considered significant since its p-value is 0.0023, which is greater than all the alpha values. The findings of this study are the same as the empirical results in the studies of McKinnon et al. (2001), Wilkinson & Room (2009), Al-hamdani & Smith (2015), Wigg & Stafford (2016), Stafford, Wigg, & Salmon (2016), Stafford & Salmon (2016), Attwood et al. (2018).

Furthermore, Table 1.0. also shows that the value of the R-Squared is 0.044070, which means that the independent variables can explain only 4.41% of the variation in the dependent variable; hence, the independent variables do not have a very substantial impact on the dependent variable. This can be attributed to the limited variables included in the study. Moreover, the value of the F-statistic is 4.287474 with a probability value of 0.002103, which generated a statistically significant result at a 0.05 level of significance.

Table 1.0. also shows the result of the various tests performed to test the heteroskedasticity and normality of distribution. First, the residual's normality p-value is 0.0685258, which is lesser than the alpha value; it accepts the null hypothesis that data is normally distributed. Second, both the Breusch-Pagan and White's Test aims to test the presence of heteroskedasticity in the data. Concerning the regression analysis results, the p-value for Breusch-Pagan and White's Test is 0.768171 and 0.64935, respectively. Since the p-value for

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both tests are greater than the 0.05 alpha, the null hypothesis is accepted. Therefore, heteroskedasticity is absent in the data.

4.2. Discussion

The study discovered that increasing the price through excise tax among alcoholic beverages would lead to a decline in alcoholic consumption among millennials in the City of Caloocan. The finding is aligned with the study of Daley et al. (2011), which found that a 25 percent increase in the tax imposed on alcoholic beverages will reduce excessive drinking. Esser et al. (2016) also concluded that the increase in alcohol sales tax was associated with a 3.8 percent decline in the total amount of alcoholic beverages sold. Over and above that, the study of Stockwell et al. (2011) has the same conclusion and highlighted that a 10 percent increase in alcohol price leads to a 16.1 percent decrease in its consumption. Hence, given the relationship between alcohol and its related harms, it is fair to assume that the decline in excessive drinking would reduce the negative externalities brought by being heavily drunk. The assumption of the said reduction in negative externalities is supported by the study of Elder et al. (2010), which found that the imposition of higher excise tax leads to the reduction of excessive alcohol consumption and its related harms, such as drunk driving and illegal substance intake. Moreover, the empirical study of Jiang et al. (2016) also concluded that increasing the price of an alcoholic beverage by increasing its tax is particularly effective in reducing consumption and its related harms among drinkers and lower-income drinkers. In line with this, the City of Caloocan has the highest poverty incidence rate in NCR; hence controlling the price of alcoholic beverages by increasing its tax is an effective way to substantially reduce the negative externalities within the said locus, given the magnitude of its poverty incidence. Furthermore, public policies that directly influence the price of alcoholic beverages effectively reduce their consumption (Wagenaar, Salois, and Komro, 2009).

Furthermore, the study found that alcohol media advertisement, either traditional or non-traditional, has an insignificant impact on influencing the level of alcohol consumption. This could be attributed to the changes on audience behavior towards advertisement especially on traditional advertisement platform, specifically through television, radio, billboard, and other print media. The shutdown of ABS-CBN, availability of video on-demand streaming platforms such as Netflix, Disney+, Amazon Prime Video, ad-supported video streaming services offered by YouTube, TikTok, Instagram, and Facebook, and premium ad-free digital media websites lead to the decline of traditional media's influence on consumer behavior. It is undeniable that millennials have pivoted to a digital on-demand subscription services to consume entertainment content given its convenience and freedom (Shelton, McKaig, and Mendez, 2016). Thus, alcohol advertisements played on traditional medium has been insignificant on affecting the behavior of

millennials in consuming alcoholic beverages. The study of Smith (2017) and Brown (2016) have shown that digital marketing is an effective manner to communicate with millennials and remains as the most important venue to reach them. On top of that, the study of Smith (2017) also discovered that coupons were shown to be the most favorite advertising and marketing method of millennials. 73 percent of millennials also favor receiving push email advertising notification. These novel marketing methods lessens the impact of traditional advertising and marketing methods. Moreover, impact of alcohol advertisements placed on digital websites have been found insignificant by this study. According to a study of Kantar Media, 64 percent of millennials use advertisement-blockers to stop advertisement to be shown while their using their devices. In addition, the availability of ad-free premium plans on YouTube limits the audience target reach of the advertiser. Moreover, as millennials shifted to digital world, the study of Bealle (2017), the average attention span of adults to give attention to a video or visual content are about 8 seconds. Thus, these factors contribute to the insignificant impact of media advertisement either traditional or non-traditional, on influencing alcohol consumption.

Meanwhile, restricting the sales of alcohol is an insignificant policy tool for reducing alcoholic beverage consumption by millennials. This claim can be explained by the following social and economic factors surrounding the Philippines during the survey period: First, the high inflation rate. Due to the unprecedented oil crisis brought on by the war between Russia and Ukraine, prices of essential commodities shot up. Given the increase in the prices of goods found in the market basket, Filipino consumers tend to cut off their consumption of certain goods and which may include alcoholic beverages. Second is the rise of remote work setup. Living under the new normal includes firms allowing their employees to work off-site. Hence, social gathering involving drinking after work reduces the chances of an individual being excessively intoxicated with alcohol which reduces negative externalities on its surroundings. Third, consumers are tired of being restricted after two years of mobility and economic restrictions brought by the government's effort to curb the spread of COVID-19. Despite of the restrictions in selling alcoholic beverages, the study of Ogilvie (2017) discovered that imposing sales restrictions on alcohol would lead on seeking intoxication through other means, many of which are more harmful than the effects of unrestricted access. Hence, consumers would find a way to consume alcohol despite of the restrictions imposed. Fourth, the 'revenge spending' consumer behavior. After being restricted for two years, consumers tend to allocate spending on recreation activities, dining out, and drinking. Consumers tend to spend on activities they miss doing during the lockdowns. The survey is deployed during the second week of September until second week of November wherein the Philippines have lifted its mandate on wearing of face masks both outdoors and indoors and in-person classes have been 100 percent resumed.

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The last variable, health warning labels, both in-text citation and pictorial has been found by this study as an effective way of reducing alcoholic beverage consumption among millennials. This finding is consistent with studies done by Wigg & Stafford (2016), where they found that pictorial health warning labels on alcohol packaging effectively reduce alcohol consumption and eventually quit it. The same findings were found by Attwood et al. (2018), wherein highly severe health warning labels on alcohol increased alcohol avoidance and motivation to drink less. In-text health warning labels were found to be effective in slowing down the rate of alcohol consumption among the study's participants. In addition, the systematic meta-analysis review of Clarke et al. (2020) discovered that health warning labels placed on alcohol products have a significant potential to reduce the selection of such alcoholic beverages. The study estimated that the size of the effect was estimated to range between 20 to 32 percent reduction in the likelihood of selection of alcoholic beverage. The study's empirical results found that both in-text and pictorial health warning labels on alcohol are statistically significant factors in affecting the alcohol consumption of millennials.

5. Conclusion

The study aimed to determine the effect of price (excise tax) and non-price factors (alcohol media advertisement, sales restrictions, and health warning labels) on the alcoholic consumption of millennials residing in the City of Caloocan. A survey questionnaire was deployed from the first week of September until the second week of November 2022. The data instrument was divided into six sections, including the respondent's socio-demographic and dependent and independent variables measurements. Furthermore, Ordinary Least Squares are utilized to perform regression analysis on the data gathered. The empirical results showed that imposing additional excise tax and placing health warning labels on alcohol packaging is a statistically significant factor that policymakers must consider in controlling excessive alcohol consumption. Moreover, media advertisements (either traditional or non-traditional) and sales restrictions were not statistically significant factors due to various economic and social events occurring during the survey period.

All the independent variables exhibited a positive relationship with alcohol consumption; hence, the statistically significant variables such as excise tax and health warning labels are public policy tools that can be utilized to decrease the excessive level of alcohol consumption. Furthermore, media advertisements and showing alcohol brands and restricting the sales of alcoholic beverages had seen to be insignificant in influencing the alcohol consumption among millennials. Numerous internationally published research studies supported the empirical

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findings of this study. Excessive alcohol consumption has several negative externalities, such as vehicular accidents, domestic and sexual abuse, health risks, consumption of the illicit drug, and suicide. Therefore, imposing excise tax and placing health-warning labels can be effectively used as a restriction tool since this study found the said variables statistically significant.

6. Policy Implications

Given the negative externalities and alcohol-related harms, the government can further utilize the excise tax and placement of health warning labels on alcoholic beverages to reduce excessive alcohol consumption. First, increasing the price of alcoholic beverages through the imposition of a higher excise tax rate would discourage millennials from consuming more alcohol; hence, its related harms are also expected to decrease. The law of demand is strongly applied to this policy since the government aims to discourage its citizens from consuming more alcoholic products by increasing its price through taxation. Hence, if the government aims to decrease the consumption of alcohol and its related harms tremendously, it may increase the sin tax rate on top of the price of alcohol.

Second, placement of either in-text or pictorial health warning labels on alcohol products is one of the practical tools that policymakers utilize to control excessive alcohol use and hence decrease its related harms. During the first regular session of the 14th Congress, former and late senator Miriam Defensor-Santiago introduced senate bill number 1783 or entitled "An Act Requiring that Alcoholic Beverages Carry Health Warnings on Their Containers," which aims to increase consciousness on the health hazards of alcohol which may be associated with its consumption. Moreover, house bill number 1098 or entitled "An Act to Effectively Instill Health Consequences Through Health Warnings on Alcoholic Beverages and Prohibiting the Advertisement on the Sale and Consumption thereof," was filed by KABAYAN Partylist Representative Ron P. Salo last 18th Congress which also aims to mandate health warning labels to be printed on the packaging and labeling alcoholic products. However, the said proposed bills failed to pass its legislative process. Given the findings of this study, policymakers must reconsider refiling the bill to lessen the negative externalities and related harms associated with excessive alcohol use.

Policymakers and government authorities can utilize the findings of this study by implementing stricter mandates on alcohol packaging and increasing the sin taxes associated with alcohol. These alcohol policies would lessen the harmful impacts of excessive intoxication of alcohol. This means that policymakers have the tool to lessen motor vehicle accidents and property damages caused by drunk driving, health diseases such as liver cancer and other chronic diseases, suicides, drug abuse, and other social problems that may cause future instability in the

labor force, the standard of living, quality of life, and gross domestic product. Policies crafted considering alcohol consumption must be targeted at specific audience niches. This study assured policymakers that through applying statistics and other econometric tests, the imposition of higher excise tax and the presence of health warning labels on alcohol containers are seen to be effective in reducing one's consumption of alcoholic beverages.

References

[1] Adams, M., & Effertz, T. (2010). Effective Prevention against Risky Underage Drinking -- The Need for Higher Excise Taxes on Alcoholic Beverages in Germany. *Alcohol and Alcoholism*, *45*(4), 387–394. https://doi.org/10.1093/alcalc/agq031

[2] Al-hamdani, M., & Smith, S. (2015). Alcohol warning label perceptions: Emerging evidence for alcohol policy. *Canadian Journal of Public Health*, *106*(6), e395–e400. https://doi.org/10.17269/cjph.106.5116

[3] Anderson, P., & Baumberg, B. (2006). Alcohol in Europe – Public Health Perspective: Report summary. *Drugs: Education, Prevention and Policy*, *13*(6), 483–488. https://doi.org/10.1080/09687630600902477

[4] Armira, A., Armira, E., Drosos, D., Skordoulis, M., & Chalikias, M. (2016). Determinants of consumers' behaviour toward alcohol drinks : the case of Greek millennials. *International Journal of Electronic Customer Relationship Management : IJECRM*, *10*(1). https://www.econbiz.de/Record/determinants-of-consumers-behaviour-toward-alcohol-drinks-the-case-of-greek-millennials-armira-andrianna/10011687953

[5] Atkin, C. K. (1990). Effects of televised alcohol messages on teenage drinking patterns. *Journal of Adolescent Health Care*, *11*(1), 10–24. https://doi.org/10.1016/0197-0070(90)90125-l

[6] Atkin, C. K., Neuendorf, K., & McDermott, S. (1983). The Role of Alcohol Advertising in Excessive and Hazardous Drinking. *Journal of Drug Education*, *13*(4), 313–325. https://doi.org/10.2190/hvm2-41pq-e774-94mf[1]

[7] Atkin, C., & Block, M. (1984). Content and effects of alcohol advertising: a reply to Strickland. *Journal of Studies on Alcohol*, *45*(1), 93–100. https://doi.org/10.15288/jsa.1984.45.93

[8] Babor, Caetano, Casswell, Edwards, Giesbrecht, Graham, Grube, Hill, Holder, Homel, Livingston, Österberg, Rehm, Room, & Rossow. (2010). Alcohol: No Ordinary

Commodity - a summary of the second edition. *Addiction*, *105*(5), 769–779. https://doi.org/10.1111/j.1360-0443.2010.02945.x

[9] Baumann, F., Buchwald, A., Friehe, T., Hottenrott, H., & Mechtel, M. (2019). The effect of a ban on late-night off-premise alcohol sales on violent crime: Evidence from Germany. *International Review of Law and Economics*, *60*, 105850. https://doi.org/10.1016/j.irle.2019.105850

[10] Beall, G. (2017). 8 Keys to Connecting with Teens on Social Media. Retrieved November 9, 2017, from *Business 2 Community*: https://www.business2community.com/social-media/8- keys-connecting-teens-social-media01807524#77j03v2I3w35piry.97

[11] Bielinska-Kwapisz, A., & Mielecka-Kubien, Z. (2011). Alcohol Consumption and Its Adverse Effects in Poland in Years 1950–2005. *Economics Research International*, *2011*, 1–13. https://doi.org/10.1155/2011/870714

[12] Billich, N., Blake, M. R., Backholer, K., Cobcroft, M., Li, V., & Peeters, A. (2018). The effect of sugar-sweetened beverage front-of-pack labels on drink selection, health knowledge and awareness: An online randomised controlled trial. *Appetite*, *128*, 233–241. https://doi.org/10.1016/j.appet.2018.05.149

[13] Bouchery, E. E., Harwood, H. J., Sacks, J. J., Simon, C. J., & Brewer, R. D. (2011). Economic Costs of Excessive Alcohol Consumption in the U.S., 2006. *American Journal of Preventive Medicine*, *41*(5), 516–524. https://doi.org/10.1016/j.amepre.2011.06.045

[14] Brewer, N. T., Parada, H., Hall, M. G., Boynton, M. H., Noar, S. M., & Ribisl, K. M. (2018). Understanding Why Pictorial Cigarette Pack Warnings Increase Quit Attempts. *Annals of Behavioral Medicine*, *53*(3), 232–243. https://doi.org/10.1093/abm/kay032

[15] Brown, K. G., Stautz, K., Hollands, G. J., Winpenny, E. M., & Marteau, T. M. (2015). The Cognitive and Behavioural Impact of Alcohol Promoting and Alcohol Warning Advertisements: An Experimental Study. *Alcohol and Alcoholism*, *51*(3), 354–362. https://doi.org/10.1093/alcalc/agv104

[16] Burton, R., Henn, C., Lavoie, D., O'Connor, R., Perkins, C., Sweeney, K., Greaves, F., Ferguson, B., Beynon, C., Belloni, A., Musto, V., Marsden, J., & Sheron, N. (2017). A rapid evidence review of the effectiveness and cost-effectiveness of alcohol control policies: an English perspective. *The Lancet*, *389*(10078), 1558–1580. https://doi.org/10.1016/s0140-6736(16)32420-5

[17] Carah, N., Brodmerkel, S., & Hernandez, L. (2014). Brands and sociality. *Convergence: The International Journal of Research into New Media Technologies*, *20*(3), 259–275. https://doi.org/10.1177/1354856514531531

[18] Carpenter, C. S., & Eisenberg, D. (2009). Effects of Sunday Sales Restrictions on Overall and Day-Specific Alcohol Consumption: Evidence From Canada. *Journal of Studies on Alcohol and Drugs*, *70*(1), 126–133. https://doi.org/10.15288/jsad.2009.70.126

[19] Carpenter, C., & Eisenberg, D. (2007). *Alcohol Availability and Alcohol Consumption: New Evidence from Sunday Sales Restrictions in Canada*. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.615.6019&rep=rep1&type=pdf

[20] Casswell, S., & Thamarangsi, T. (2009). Reducing harm from alcohol: call to action. *The Lancet*, *373*(9682), 2247–2257. https://doi.org/10.1016/s0140-6736(09)60745-5

[21]CDC. National Center for Chronic Disease Prevention and Health Promotion. (2015). *Alcohol Use and Your Health*. https://www.cdc.gov/alcohol/pdfs/alcoholyourhealth.pdf

[22] Cho, Y. J., Thrasher, J. F., Yong, H.-H., Szklo, A. S., O'Connor, R. J., Bansal-Travers, M., Hammond, D., Fong, G. T., Hardin, J., & Borland, R. (2018). Path analysis of warning label effects on negative emotions and quit attempts: A longitudinal study of smokers in Australia, Canada, Mexico, and the US. *Social Science & Medicine*, *197*, 226–234. https://doi.org/10.1016/j.socscimed.2017.10.003

[23] Clarke, N., Pechey, E., Kosīte, D., König, L. M., Mantzari, E., Blackwell, A. K. M., Marteau, T. M., & Hollands, G. J. (2020). Impact of Health Warning Labels on Selection and Consumption of Food and Alcohol Products: Systematic Review with Meta-analysis. *Health Psychology Review*, 1–39. https://doi.org/10.1080/17437199.2020.1780147

[24] Community Preventive Services Task Force. (2018). *Alcohol – Excessive Consumption: Maintaining Limits on Hours of Sale*. The Guide to Community Preventive Services (the Community Guide). https://www.thecommunityguide.org/findings/alcohol-excessive-consumption-maintaining-limits-hours-sale

[25] Cook, P. A., Phillips-Howard, P. A., Morleo, M., Harkins, C., Briant, L., & Bellis, M. A. (2011). The Big Drink Debate: perceptions of the impact of price on alcohol consumption from a large scale cross-sectional convenience survey in north west England. *BMC Public Health*, *11*(1). https://doi.org/10.1186/1471-2458-11-664

[26] Coomber, K., Martino, F., Barbour, I. R., Mayshak, R., & Miller, P. G. (2015). Do consumers "Get the facts"? A survey of alcohol warning label recognition in Australia. *BMC Public Health*, *15*(1). https://doi.org/10.1186/s12889-015-2160-0

[27] Critchlow, N., MacKintosh, A. M., Thomas, C., Hooper, L., & Vohra, J. (2019). Awareness of alcohol marketing, ownership of alcohol branded merchandise, and the association with alcohol consumption, higher-risk drinking, and drinking susceptibility in adolescents and young adults: a cross-sectional survey in the UK. *BMJ Open*, *9*(3), e025297. https://doi.org/10.1136/bmjopen-2018-025297

[28] Daley, J. I., Stahre, M. A., Chaloupka, F. J., & Naimi, T. S. (2012). The Impact of a 25-Cent-Per-Drink Alcohol Tax Increase. *American Journal of Preventive Medicine*, *42*(4), 382–389. https://doi.org/10.1016/j.amepre.2011.12.008

[29] Dimock, M. (2019). *Defining generations: Where Millennials End and Generation Z Begins*. Pew Research Center. https://www.pewresearch.org/fact-tank/2019/01/17/where-millennials-end-and-generation-z-begins/

[30] Elder, R. W., Lawrence, B., Ferguson, A., Naimi, T. S., Brewer, R. D., Chattopadhyay, S. K., Toomey, T. L., & Fielding, J. E. (2010). The Effectiveness of Tax Policy Interventions for Reducing Excessive Alcohol Consumption and Related Harms. *American Journal of Preventive Medicine*, *38*(2), 217–229. https://doi.org/10.1016/j.amepre.2009.11.005

[31] Elton-Marshall, T., Xu, S. S., Meng, G., Quah, A. C. K., Sansone, G. C., Feng, G., Jiang, Y., Driezen, P., Omar, M., Awang, R., & Fong, G. T. (2015). The lower effectiveness of text-only health warnings in China compared to pictorial warnings in Malaysia: findings from the ITC project. *Tobacco Control*, tobaccocontrol-2015-052616. https://doi.org/10.1136/tobaccocontrol-2015-052616

[32] Esser, M. B., Waters, H., Smart, M., & Jernigan, D. H. (2016). Impact of Maryland's 2011 alcohol sales tax increase on alcoholic beverage sales. *The American Journal of Drug and Alcohol Abuse*, *42*(4), 404–411. https://doi.org/10.3109/00952990.2016.1150485

[33] Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1–4.

[34] Farrell, S., Manning, W. G., & Finch, M. D. (2003). Alcohol dependence and the price of alcoholic beverages. *Journal of Health Economics*, *22*(1), 117–147. https://doi.org/10.1016/s0167-6296(02)00099-1

[35] Fitzgerald, H. E., & Zucker, R. A. (2021). Socioeconomic Status and Alcoholism: The Contextual Structure of Developmental Pathways to Addiction. *Children of Poverty*, 125–148. https://doi.org/10.4324/9781315861623-6

[36] Gallet, C. A. (2007). The demand for alcohol: a meta-analysis of elasticities. *The Australian Journal of Agricultural and Resource Economics*, *51*(2), 121–135. https://doi.org/10.1111/j.1467-8489.2007.00365.x

[37] Gehrsitz, M., Saffer, H., & Grossman, M. (2021). The effect of changes in alcohol tax differentials on alcohol consumption. *Journal of Public Economics*, *204*, 104520. https://doi.org/10.1016/j.jpubeco.2021.104520

[38] Greenfield, T. K., Ye, Y., Bond, J., Kerr, W. C., Nayak, M. B., Kaskutas, L. A., Anton, R. F., Litten, R. Z., & Kranzler, H. R. (2014). Risks of Alcohol Use Disorders Related to Drinking Patterns in the U.S. General Population. *Journal of Studies on Alcohol and Drugs*, *75*(2), 319–327. https://doi.org/10.15288/jsad.2014.75.319

[39] Griffith, R., O'Connell, M., & Smith, K. (2017). *Designing alcohol taxes: Evidence from the UK market*. VoxEU.org. https://voxeu.org/article/designing-alcohol-taxes

[40] Griffith, R., O'Connell, M., & Smith, K. (2019). Tax design in the alcohol market. *Journal of Public Economics*, *172*, 20–35. https://doi.org/10.1016/j.jpubeco.2018.12.005

[41] Grittner, U., Gustafsson, N.-K., & Bloomfield, K. (2009). Changes in Alcohol Consumption in Denmark after the Tax Reduction on Spirits. *European Addiction Research*, *15*(4), 216–223. https://doi.org/10.1159/000239415

[42] Grönqvist, H., & Niknami, S. (2014). Alcohol availability and crime: Lessons from liberalized weekend sales restrictions. *Journal of Urban Economics*, *81*, 77–84. https://doi.org/10.1016/j.jue.2014.03.001

[43] Gruber, J., & Koszegi, B. (2002). *A Theory of Government Regulation of Addictive Bads: Optimal Tax Levels and Tax Incidence for Cigarette Excise Taxation*. National Bureau of Economic Research. http://www.nber.org/papers/w8777

[44] Gujarati, D. (2011). *Econometrics by Example* (1st ed.). Palgrave Macmillan. 102-103.

[45] Hahn, R. A., Kuzara, J. L., Elder, R., Brewer, R., Chattopadhyay, S., Fielding, J., Naimi, T. S., Toomey, T., Middleton, J. C., & Lawrence, B. (2010). Effectiveness of Policies Restricting Hours of Alcohol Sales in Preventing Excessive Alcohol Consumption and Related Harms. *American Journal of Preventive Medicine*, *39*(6), 590–604. https://doi.org/10.1016/j.amepre.2010.09.016

[46] Hammond, D. (2011). Health warning messages on tobacco products: a review. *Tobacco Control*, *20*(5), 327–337. https://doi.org/10.1136/tc.2010.037630

[47] Heinz, A. J., Beck, A., Meyer-Lindenberg, A., Sterzer, P., & Heinz, A. (2011). Cognitive and neurobiological mechanisms of alcohol-related aggression. *Nature Reviews Neuroscience*, *12*(7), 400–413. https://doi.org/10.1038/nrn3042

[48] Hobin, E., Schoueri-Mychasiw, N., Weerasinghe, A., Vallance, K., Hammond, D., Greenfield, T. K., McGavock, J., Paradis, C., & Stockwell, T. (2020). Effects of strengthening alcohol labels on attention, message processing, and perceived effectiveness: A quasi-experimental study in Yukon, Canada. *The International Journal on Drug Policy*, *77*, 102666. https://doi.org/10.1016/j.drugpo.2020.102666

[49] Jackson, K. M., & Bartholow, B. D. (2020). Psychological Processes Underlying Effects of Alcohol Marketing on Youth Drinking. *Journal of Studies on Alcohol and Drugs, Supplement*, *s19*, 81–96. https://doi.org/10.15288/jsads.2020.s19.81

[50] Jensen, R. T., & Miller, N. H. (2008). Giffen Behavior and Subsistence Consumption. *The American Economic Review*, *98*(4), 1553–1577. http://www.jstor.org/stable/29730133?origin=JSTOR-pdf

[51] Jiang, H., Livingston, M., Room, R., & Callinan, S. (2016). Price elasticity of on- and off-premises demand for alcoholic drinks: A Tobit analysis. *Drug and Alcohol Dependence*, *163*, 222–228. https://doi.org/10.1016/j.drugalcdep.2016.04.026

[52] Jones, S. C., & Magee, C. A. (2011). Exposure to Alcohol Advertising and Alcohol Consumption among Australian Adolescents. *Alcohol and Alcoholism*, *46*(5), 630–637. https://doi.org/10.1093/alcalc/agr080

[53] Jones-Webb, R., Snowden, L., Herd, D., Short, B., & Hannan, P. (1997). Alcohol-related problems among black, Hispanic and white men: the contribution of neighborhood poverty. *Journal of Studies on Alcohol*, *58*(5), 539–545. https://doi.org/10.15288/jsa.1997.58.539

[54] Jarque, C., Bera, A., 1980. Efficient tests for normality, homoscedasticity and serial independence of regression residuals. Economics Letters 6, 255–259.

[55] Jyani, G., Prinja, S., Ambekar, A., Bahuguna, P., & Kumar, R. (2019). Health impact and economic burden of alcohol consumption in India. *International Journal of Drug Policy*, *69*, 34–42. https://doi.org/10.1016/j.drugpo.2019.04.005

[56] Karpuškienė, V. (2021). Alcohol Availability Restriction Policy and Changes in Consumer Behavior in Lithuania in 2016–2019. *Ekonomika*, *100*(1), 75–93. https://doi.org/10.15388/ekon.2021.1.5

[57] Kaskutas, L., & Greenfield, T. K. (1992). First effects of warning labels on alcoholic beverage containers. *Drug and Alcohol Dependence*, *31*(1), 1–14. https://doi.org/10.1016/0376-8716(92)90002-t

[58] Katainen, A., Kauppila, E., Svensson, J., Lindeman, M., & Hellman, M. (2020). Regulating Alcohol Marketing on Social Media: Outcomes and Limitations of Marketing Restrictions of Finland's 2015 Alcohol Act. *Journal of Studies on Alcohol and Drugs*, *81*(1), 39–46. https://doi.org/10.15288/jsad.2020.81.39

[59] Kellershohn, J. (2018). Alcoholic Beverages: Technology and Next-Generation Marketing. *Innovations in Technologies for Fermented Food and Beverage Industries*, 105–120. https://doi.org/10.1007/978-3-319-74820-7_6

[60] Kenkel, D. S. (2005). Are Alcohol Tax Hikes Fully Passed Through to Prices? Evidence from Alaska. *American Economic Review*, *95*(2), 273–277. https://doi.org/10.1257/000282805774670284

[61] Kersbergen, I., & Field, M. (2017). Alcohol consumers' attention to warning labels and brand information on alcohol packaging: Findings from cross-sectional and experimental studies. *BMC Public Health*, *17*(1). https://doi.org/10.1186/s12889-017-4055-8

[62] Kokole, D., Anderson, P., & Jané-Llopis, E. (2021). Nature and Potential Impact of Alcohol Health Warning Labels: A Scoping Review. *Nutrients*, *13*(9), 3065. https://doi.org/10.3390/nu13093065

[63] Kolosnitsyna, M., Sitdikov, M., & Khorkina, N. (2014). Availability restrictions and alcohol consumption: A case of restricted hours of alcohol sales in Russian regions. *The International Journal of Alcohol and Drug Research*, *3*(3), 193. https://doi.org/10.7895/ijadr.v3i3.154

[64] Kumar, S. (2017). Price Elasticity of Alcohol Demand in India. *Alcohol and Alcoholism*, *52*(3), 390–395. https://doi.org/10.1093/alcalc/agx001

[65] Kypri, K., Jones, C., McElduff, P., & Barker, D. (2010). Effects of restricting pub closing times on night-time assaults in an Australian city. *Addiction*, *106*(2), 303–310. https://doi.org/10.1111/j.1360-0443.2010.03125.x

[66] Lillard, D. R., Molloy, E., & Zan, H. (2018). Television and Magazine Alcohol Advertising: Exposure and Trends by Sex and Age. *Journal of Studies on Alcohol and Drugs*, *79*(6), 881–892. https://doi.org/10.15288/jsad.2018.79.881

[67] MacKinnon, D. P., Nohre, L., Cheong, J., Stacy, A. W., & Pentz, M. A. (2001). Longitudinal relationship between the alcohol warning label and alcohol consumption. *Journal of Studies on Alcohol*, *62*(2), 221–227. https://doi.org/10.15288/jsa.2001.62.221

[68] Mäkelä, P., & Österberg, E. (2009). Weakening of one more alcohol control pillar: a review of the effects of the alcohol tax cuts in Finland in 2004. *Addiction*, *104*(4), 554–563. https://doi.org/10.1111/j.1360-0443.2009.02517.x

[69] Mantzari, E., Vasiljevic, M., Turney, I., Pilling, M., & Marteau, T. (2018). Impact of warning labels on sugar-sweetened beverages on parental selection: An online experimental study. *Preventive Medicine Reports*, *12*, 259–267. https://doi.org/10.1016/j.pmedr.2018.10.016

[70] Martin, E. (2006). *Survey Questionnaire Construction*. https://www.census.gov/content/dam/Census/library/workingpapers/2006/adrm/rsm2006-13.pdf

[71] McKinney, C. M., Chartier, K. G., Caetano, R., & Harris, T. R. (2012). Alcohol Availability and Neighborhood Poverty and Their Relationship to Binge Drinking and Related Problems Among Drinkers in Committed Relationships. *Journal of Interpersonal Violence*, *27*(13), 2703–2727. https://doi.org/10.1177/0886260512436396

[72] Meng, Y., Brennan, A., Purshouse, R., Hill-McManus, D., Angus, C., Holmes, J., & Meier, P. S. (2014). Estimation of own and cross price elasticities of alcohol demand in the UK—A pseudo-panel approach using the Living Costs and Food Survey 2001–2009. *Journal of Health Economics*, *34*, 96–103. https://doi.org/10.1016/j.jhealeco.2013.12.006

[73] Middleton, J. C., Hahn, R. A., Kuzara, J. L., Elder, R., Brewer, R., Chattopadhyay, S., Fielding, J., Naimi, T. S., Toomey, T., & Lawrence, B. (2010). Effectiveness of Policies Maintaining or Restricting Days of Alcohol Sales on Excessive Alcohol Consumption and Related Harms. *American Journal of Preventive Medicine*, *39*(6), 575–589. https://doi.org/10.1016/j.amepre.2010.09.015

[74] Midford, R., Young, D., Chikritzhs, T., Playford, D., Kite, E., & Pascal, R. (2010). The effect of alcohol sales and advertising restrictions on a remote Australian community. *Drugs: Education, Prevention and Policy*, *17*(1), 21–41. https://doi.org/10.3109/09687630802145271

[75] Mongan, A. (2012). *Drug use in Ireland and Northern Ireland. Alcohol consumption and alcohol-related harm in Ireland 2010/2011 drug prevalence survey. Bulletin 7.* Www.drugsandalcohol.ie. https://www.drugsandalcohol.ie/18439/

[76] Morgenstern, M., Dumbili, E. W., Hansen, J., & Hanewinkel, R. (2021). Effects of alcohol warning labels on alcohol-related cognitions among German adolescents: A factorial experiment. *Addictive Behaviors*, *117*, 106868. https://doi.org/10.1016/j.addbeh.2021.106868

[77] Murray, A. (2020). Millennials and the alcohol industry: expenditure variations among generations. *Applied Economics Letters*, 1–6. https://doi.org/10.1080/13504851.2020.1808569

[78] Naimi, T. S., Ross, C. S., Siegel, M. B., DeJong, W., & Jernigan, D. H. (2016). Amount of Televised Alcohol Advertising Exposure and the Quantity of Alcohol Consumed by Youth. *Journal of Studies on Alcohol and Drugs*, *77*(5), 723–729. https://doi.org/10.15288/jsad.2016.77.723

[79] Niland, P., McCreanor, T., Lyons, A. C., & Griffin, C. (2016). Alcohol marketing on social

media: young adults engage with alcohol marketing on facebook. *Addiction Research & Theory*, *25*(4), 273–284. https://doi.org/10.1080/16066359.2016.1245293

[80] Noel, J. K., Sammartino, C. J., & Rosenthal, S. R. (2020). Exposure to Digital Alcohol Marketing and Alcohol Use: A Systematic Review. *Journal of Studies on Alcohol and Drugs, Supplement*, *s19*, 57–67. https://doi.org/10.15288/jsads.2020.s19.57

[81] O'Donoghue, T., & Rabin, M. (2006). Optimal sin taxes. *Journal of Public Economics*, *90*(10-11), 1825–1849. https://doi.org/10.1016/j.jpubeco.2006.03.001

[82] Ogilvie, K. A. (2017). Unintended consequences of local alcohol restrictions in rural Alaska. *Journal of Ethnicity in Substance Abuse*, *17*(1), 16–31. https://doi.org/10.1080/15332640.2017.1362728

[83] Petticrew, M., Shemilt, I., Lorenc, T., Marteau, T. M., Melendez-Torres, G. J., O'Mara-Eves, A., Stautz, K., & Thomas, J. (2016). Alcohol advertising and public health: systems perspectives versus narrow perspectives. *Journal of Epidemiology and Community Health*, *71*(3), 308–312. https://doi.org/10.1136/jech-2016-207644

[84] Pinsky, I., & El Jundi, S. A. (2008). Alcohol advertising and alcohol consumption among youngsters: review of the international literature]. *Revista brasileira de psiquiatria (Sao Paulo, Brazil : 1999)*, *30*(4), 362–374. https://doi.org/10.1590/s1516-44462008005000015

[85] Philippine Statistics Authority. (2016). *Highlights of the Philippine Population 2015 Census of Population*. Psa.gov.ph. https://psa.gov.ph/content/highlights-philippine-population-2015-census-population

[86] Philippine Statistics Authority. (2018). *Poverty Statistics of the Philippine Statistics Authority*. Rssoncr.psa.gov.ph. http://rssoncr.psa.gov.ph/ncr4

[87] Popova, S., Giesbrecht, N., Bekmuradov, D., & Patra, J. (2009). Hours and Days of Sale and Density of Alcohol Outlets: Impacts on Alcohol Consumption and Damage: A Systematic Review. *Alcohol and Alcoholism*, *44*(5), 500–516. https://doi.org/10.1093/alcalc/agp054

[88] Rai, & Thapa. (2015). *A Study on Purposive Sampling Method in Research*. Academia.edu. https://www.academia.edu/28087388/A_STUDY_ON_PURPOSIVE_SAMPLING_METHOD_IN_RESEARCH

[89] Raosoft Inc. (2004). Sample Size Calculator. http://www.raosoft.com/samplesize.html

[90] Ramsey, J. B. (1969), "Tests for Specification Errors in Classical Linear Least-Squares Analysis," *Journal of the Royal Statistical Association*, Series B, 71, 350–371

[91] Rehm, J., Mathers, C., Popova, S., Thavorncharoensap, M., Teerawattananon, Y., & Patra, J. (2009). Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders. *Lancet (London, England)*, *373*(9682), 2223–2233. https://doi.org/10.1016/S0140-6736(09)60746-7

[92] Reynolds, J. P., Archer, S., Pilling, M., Kenny, M., Hollands, G. J., & Marteau, T. M. (2019). Public acceptability of nudging and taxing to reduce consumption of alcohol, tobacco, and food: A population-based survey experiment. *Social Science & Medicine*, *236*, 112395. https://doi.org/10.1016/j.socscimed.2019.112395

[93] Russell, D. W., & Russell, C. A. (2008). Embedded Alcohol Messages in Television Series: The Interactive Effect of Warnings and Audience Connectedness on Viewers' Alcohol Beliefs. *Journal of Studies on Alcohol and Drugs*, *69*(3), 459–467. https://doi.org/10.15288/jsad.2008.69.459

[94] Sherk, A., Stockwell, T., Chikritzhs, T., Andréasson, S., Angus, C., Gripenberg, J., Holder, H., Holmes, J., Mäkelä, P., Mills, M., Norström, T., Ramstedt, M., & Woods, J. (2018). Alcohol Consumption and the Physical Availability of Take-Away Alcohol: Systematic Reviews and Meta-Analyses of the Days and Hours of Sale and Outlet Density. *Journal of Studies on Alcohol and Drugs*, *79*(1), 58–67. https://doi.org/10.15288/jsad.2018.79.58

[94] Sillero-Rejon, C., Attwood, A. S., Blackwell, A. K. M., Ibáñez-Zapata, J.-A., Munafò, M. R., & Maynard, O. M. (2018). Alcohol pictorial health warning labels: the impact of self-affirmation and health warning severity. *BMC Public Health*, *18*(1). https://doi.org/10.1186/s12889-018-6243-6

[95] Skorobogatov, A. (2014). *The Effect of Closing Hour Restrictions on Alcohol Use and Abuse in Russia*. Papers.ssrn.com. http://ssrn.com/abstract=2501865

[96] Slater, M. D., & Domenech, M. M. (1995). Alcohol warnings in TV beer advertisements. *Journal of Studies on Alcohol*, *56*(3), 361–367. https://doi.org/10.15288/jsa.1995.56.361

[97] Smith, K. T. (2011). Digital marketing strategies that Millennials find appealing, motivating, or just annoying. *Journal of Strategic Marketing*, 19(6), 489–499. https://doi.org/10.1080/0965254x.2011.581383

[98] Snyder, L. B., Milici, F. F., Slater, M., Sun, H., & Strizhakova, Y. (2006). Effects of Alcohol Advertising Exposure on Drinking Among Youth. *Archives of Pediatrics & Adolescent Medicine*, *160*(1), 18. https://doi.org/10.1001/archpedi.160.1.18

[99] Sornpaisran. (2019). *Creative Commons — Attribution-NonCommercial-ShareAlike 3.0 IGO — CC BY-NC-SA 3.0 IGO*. Creativecommons.org.

[100] Stafford, L. D., & Salmon, J. (2016). Alcohol health warnings can influence the speed of consumption. *Journal of Public Health*, *25*(2), 147–154. https://doi.org/10.1007/s10389-016-0770-3

[101] Stafford, L. D., Wigg, S., & Salmon, J. (2016). Alcohol health warning messages: Effects on attitudes and consumption. *Appetite*, *107*, 692. https://doi.org/10.1016/j.appet.2016.08.089

[102] Staub, C., & Siegrist, M. (2022). How health warning labels on wine and vodka bottles influence perceived risk, rejection, and acceptance. *BMC Public Health*, *22*(1). https://doi.org/10.1186/s12889-022-12564-8

[103] Stautz, K., Frings, D., Albery, I. P., Moss, A. C., & Marteau, T. M. (2016). Impact of alcohol-promoting and alcohol-warning advertisements on alcohol consumption, affect, and implicit cognition in heavy-drinking young adults: A laboratory-based randomized controlled trial. *British Journal of Health Psychology*, *22*(1), 128–150. https://doi.org/10.1111/bjhp.12221

[104] Stockwell, T., Auld, M. C., Zhao, J., & Martin, G. (2012). Does minimum pricing reduce alcohol consumption? The experience of a Canadian province. *Addiction*, *107*(5), 912–920. https://doi.org/10.1111/j.1360-0443.2011.03763.x

[105] Sychareun, V., Hansana, V., Phengsavanh, A., Chaleunvong, K., & Tomson, T. (2015). Perceptions and acceptability of pictorial health warning labels vs text only - a cross-sectional study in Lao PDR. *BMC Public Health*, *15*(1). https://doi.org/10.1186/s12889-015-2415-9

[106] Task Force on Community Preventive Services. (2010). Increasing Alcoholic Beverage Taxes Is Recommended to Reduce Excessive Alcohol Consumption and Related Harms. *American Journal of Preventive Medicine*, *38*(2), 230–232. https://doi.org/10.1016/j.amepre.2009.11.002

[107] Thavorncharoensap, M., Teerawattananon, Y., Yothasamut, J., Lertpitakpong, C., & Chaikledkaew, U. (2009). The economic impact of alcohol consumption: a systematic review. *Substance Abuse Treatment, Prevention, and Policy*, *4*(1). https://doi.org/10.1186/1747-597x-4-20

[108] Therapondos, G., Delahooke, T. E. S., & Hayes, P. C. (1999). Health effects of alcohol and alcoholism. *Clinics in Dermatology*, *17*(4), 381–389. https://doi.org/10.1016/s0738-081x(99)00021-8

[109] Theron, M., Swart, R., Londani, M., Parry, C., Petersen Williams, P., & Harker, N. (2022). Did COVID-19-Related Alcohol Sales Restrictions Reduce Alcohol

Consumption? Findings from a National Online Survey in South Africa. *International Journal of Environmental Research and Public Health*, *19*(4), 2422. https://doi.org/10.3390/ijerph19042422

[110] Treisman, D. (2009). *Death and prices: The political economy of Russia's alcohol crisis*. https://www.sscnet.ucla.edu/polisci/faculty/treisman/Papers/Death%20and%20Prices%20Final%20Sept%2009.pdf

[111] Valbuena, J. P. (2006). *Alcohol and media: The situation in the Philippines*. http://apapaonline.org/data/National_Data/Philippines/Alcohol_Media_Philippines.pdf

[112] van den Berg, M., van Baal, P. H., Tariq, L., Schuit, A. J., de Wit, G. A., & Hoogenveen, R. T. (2008). The cost-effectiveness of increasing alcohol taxes: a modelling study. *BMC Medicine*, *6*(1). https://doi.org/10.1186/1741-7015-6-36

[113] Wagenaar, A. C., Salois, M. J., & Komro, K. A. (2009). Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. *Addiction (Abingdon, England)*, *104*(2), 179–190. https://doi.org/10.1111/j.1360-0443.2008.02438.x

[114] Wagenaar, Salois, & Komro. (2009). *[PDF] Effects of beverage alcohol taxes and prices on drinking: a meta-analysis of 1003 estimates from 112 studies - Free Download PDF*. Silo.tips. https://silo.tips/download/effects-of-beverage-alcohol-taxes-and-prices-on-drinking-a-meta-analysis-of-1003

[115] Wang, R., Qiang, Y., Zhu, Y., Gao, X., Yang, Q., & Li, B. (2021). The estimated effect of graphic warning labels on smoker's intention to quit in Shanghai, China: a cross-sectional study. *BMC Public Health*, *21*(1). https://doi.org/10.1186/s12889-021-12257-8

[116] Wigg, S., & Stafford, L. D. (2016). Health Warnings on Alcoholic Beverages: Perceptions of the Health Risks and Intentions towards Alcohol Consumption. *PLOS ONE*, *11*(4), e0153027. https://doi.org/10.1371/journal.pone.0153027

[117] Wilkinson, C., Livingston, M., & Room, R. (2016). Impacts of changes to trading hours of liquor licences on alcohol-related harm: a systematic review 2005–2015. *Public Health Research & Practice*, *26*(4). https://doi.org/10.17061/phrp2641644

[118] Wilkinson, C., & Room, R. (2009). Warnings on alcohol containers and advertisements: International experience and evidence on effects. *Drug and Alcohol Review*, *28*(4), 426–435. https://doi.org/10.1111/j.1465-3362.2009.00055.x

[119] Wooldridge, J. (2016). Introductory Econometrics: A Modern Approach (6th ed.). Cengage Learning, 392-394, 380-381

[120] World Health Organization. (2010). *Global strategy to reduce the harmful use of alcohol*.

Www.who.int. https://www.who.int/publications-detail-redirect/9789241599931

[121] World Health Organization. (2014). *Questionnaire*. Www.who.int. https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/global-youth-tobacco-survey/questionnaire

[122] World Health Organization. (2018). *Research demonstrates higher alcohol taxes help reduce alcohol consumption*. Www.euro.who.int. https://www.euro.who.int/en/health-topics/disease-prevention/alcohol-use/news/news/2018/08/research-demonstrates-higher-alcohol-taxes-help-reduce-alcohol-consumption#:~:text=Previous%20research%20has%20indicated%20that

[123] World Health Organization. (2018b). *Global status report on alcohol and health 2018*. Www.who.int. https://www.who.int/publications/i/item/9789241565639

[124] World Health Organization. (2022). *Alcohol*. Who.int; World Health Organization: WHO. https://www.who.int/news-room/fact-sheets/detail/alcohol

[125] Wyllie, A., Zhang, J. F., & Casswell, S. (1998). Positive responses to televised beer advertisements associated with drinking and problems reported by 18 to 29-year-olds. *Addiction*, *93*(5), 749–760. https://doi.org/10.1046/j.1360-0443.1998.93574911.x

[126] Xu, X., & Chaloupka, F. (2011). *THE EFFECTS OF PRICES ON ALCOHOL USE AND ITS CONSEQUENCES*. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3860576/pdf/arh-34-2-236.pdf

[127] Yörük, B. K. (2013). Legalization of Sunday alcohol sales and alcohol consumption in the United States. *Addiction*, *109*(1), 55–61. https://doi.org/10.1111/add.12358

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