



The Department of Health Sciences

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Student Examination Number:	Y3874726
Module Code:	HEA00063M
Module Information: <i>Module Title and Module Assignment</i>	Health and Social Behaviour
Submission Deadline:	15 June 2020
Attempt: <i>* Delete as appropriate</i>	First attempt
Actual Word Count:	1486

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Is Taxation Sufficient to Reduce Sugar-sweetened Beverage Consumption in Chile?

Obesity in Chile is a serious problem. The Organization for Economic Co-operation and Development (OECD) notes that almost a third of Chilean adults are obese while 44.5% of children are overweight or obese (OECD, 2019). A shift in dietary patterns characterised by higher intake of calories from ultra-processed food high in fat, salt and sugar during the 1980s is often cited as a potential cause behind these rates (Albala et al., 2002; Vio et al., 2008; Vio, 2007). Researchers concur that this shift may have led to higher consumption of sugar-sweetened beverages (SSBs) in Chile (Hurst et al., 2013). The Chilean government has adopted the tactic of taxation of SSBs to address this threat. This essay will discuss the nature of the taxation against the backdrop of sociological, behavioural and psychological aspects of health in Chile. The economic history of Chile will be alluded to occasionally to contextualize this discussion.

Chile recorded the fastest absolute growth in the sale of SSBs per-capita in the world from 2009-2014 as shown in Fig. 1 (Popkin and Hawkes, 2016, p. 20, fig. 6). At the ending year of the survey period, the Chilean government announced a two-pronged tax reform to control SSB consumption: a differential tax of 18% for SSBs exceeding 6.25gm of sugar/100mL and for those less than this, 10% tax (Caro et al., 2018). It is noteworthy that Chile has a history of beverage taxation. The oldest evidence of taxation dates back to 1979 which imposed a 15% *ad valorem* tax on industrialized beverages - both alcoholic and non-alcoholic, subsequently reduced to 13% in 1985 (Caro et al., 2018). Four decades after the first taxation, Chile continues to struggle in its quest to reduce SSB consumption

(Vio, 2007; Hurst et al., 2013). This indicates the inefficacy of the taxation tactic and indicates that a policy strategy guided by the sociological, psychological, behavioural and economic drivers of high consumption of SSBs may be more adequate.

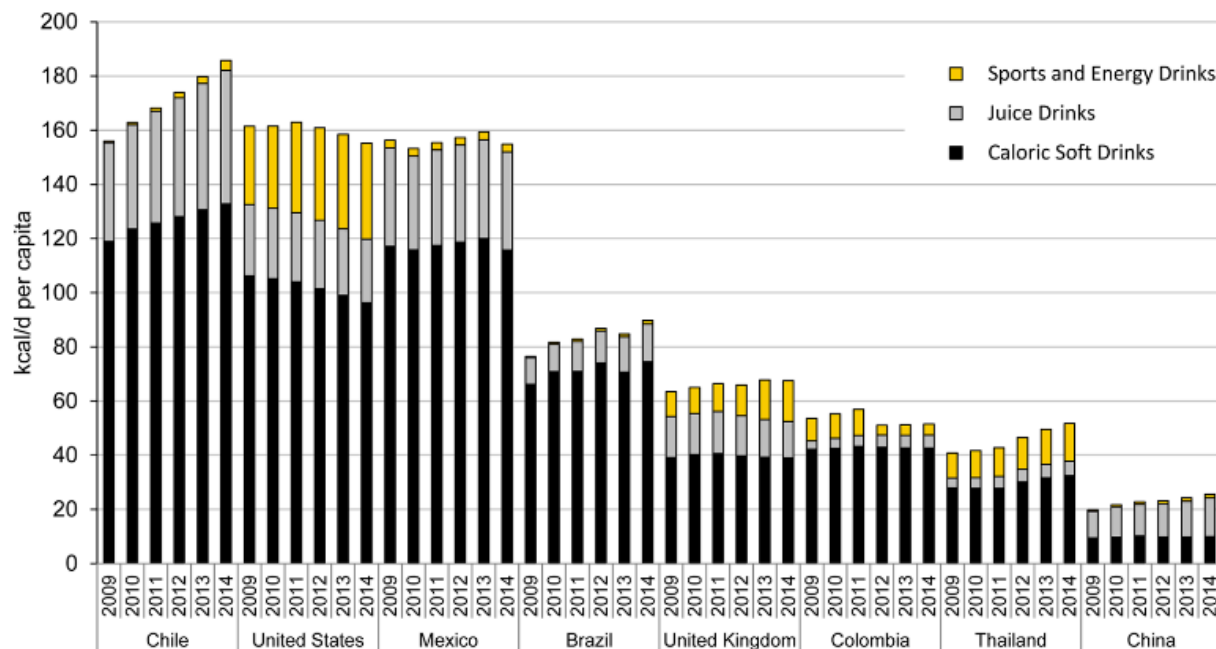


Figure 1: Calories Sold per Capita per Day from all Sugar-Sweetened Beverage by Country, 2009–2014. Source: Euromonitor Passport International with country-specific kcal data added (not for use or quotation). Only caloric beverages included. (Popkin and Hawkes, 2016, p. 20, fig. 6)

Theories in sociology and social psychology may help in gaining a deeper understanding regarding the high SSB consumption behaviour among Chileans. Sociologist Durkheim argues that the society overarches people's life and coerces people to act in a certain way (Durkheim, 1895). Thus, the rising consumption of SSBs in Chile could be attributed to a situation - *situational* attribution (Heider, 1958). Accordingly, it may be reasoned that the increased production, manufacturing, advertisement and marketing of SSBs may have increased their consumption. In fact, Nestle (2015) in her book *Soda Politics*, provides an in-depth description of the connection between marketing blitz and SSB consumption.

Meanwhile, the *dispositional* attribution (Heider, 1958), which partially overlaps with Max Weber's *methodological individualism* (Weber, 1922), positions the individual directly at the centre of the debate on determinants of high SSB consumption. According to this view, the social action by an individual, guided by emotion or logic, could provide vital clues regarding the increased consumption of SSBs. These two contradictory yet defensible attribution premises are supportive, but insufficient, in the exploration of the desired policy strategy. A deeper exploration into the complex relationship of these attribution concepts with the Chilean economic history and sociocultural evolution could further expand the current understanding.

To appreciate this complex relationship, it is crucial to recall the economic turmoil that Chile experienced during 1973-1984 (Buc, 2006). The inflation rate stood at 508%, availability of food was scarce, government social policies failed to protect the health needs of the most vulnerable population and 48% of the population lived below poverty line (ibid). To tackle the economic crisis and the accompanying social predicament, Chilean government gradually implemented free-market trade policies opening its borders to privatization, globalization and liberalization (Albala et al., 2002). This phase marks a major shift in Chilean economic and public health history; employment demands increased and the primary health problems of malnutrition, infectious diseases and poor sanitation were solved (Vio et al., 2008). Increase in employment demands encouraged people to migrate to urban settings driving massive urbanization which would later play a significant role in triggering a socio-cultural evolution in Chile.

A major aspect of this socio-cultural evolution was the change in the eating patterns of Chileans. The proportion of energy intake from fats, highly processed carbohydrates and sugar-sweetened beverages increased (INE, 2007) whilst the consumption of traditional healthier Chilean diet decreased (Vio et al., 2008; Albala et al., 2002). This transition from healthier eating to less healthier eating, often called the *nutrition transition*, is recognised as particularly rapid in the case of Chile (Vio et al., 2008). Thus, it could be argued that in the case of Chile, actions to accelerate economic recovery led to urbanization which precipitated a socio-cultural evolution – a consequence of which was adoption of unhealthy diets by Chileans. However, the government gradually recognized the appearance of the nutrition transition on the national front and launched several reforms to limit its harmful effects. One of those reforms was the taxation of SSBs.

Despite the long history of taxation starting 1979, the country continues to battle the problem of high SSB consumption. This raises doubts about the efficacy of the taxation as the sole approach to lower SSB consumption in Chile. The efficacy of taxation, it appears, presumes public co-operation and support. However, this premise is arguably flawed because individual beliefs act as moderators to behavioural actions according to the *elaboration likelihood model* (Petty and Cacioppo, 1979). This means that people who believe SSBs to be harmful to health would exercise greater caution while purchasing them than those who do not believe so. The latter group may merely limit their purchase in an episodic manner rather than a sustainable manner owing to their knowledge gap (Gaziano, 1983; Hwang and Jeong, 2009). In fact, research on reduction in SSB purchase post-tax enforcement reports improvement among the higher socio-economic households as opposed to the lower socio-economic households (Caro et al., 2018; Nakamura et al., 2018).

Thus, introduction of taxation as the singular tactic without attention to the behavioural psychology behind the purchasing patterns of SSB may limit its efficacy in reducing the SSB consumption in Chile.

Efficacy of a taxation policy however raises some complex questions related to measuring it. Since not much is known about the attribution of SSB consumption to obesity, it is difficult to estimate how much of it could be mitigated through these reforms and among whom. Although Agúero et al. (2020) make an attempt to measure efficacy through assessment of the SSB consumption behaviour among a sample of Chileans, the cross-sectional nature of the study tells us very little about how the results fit in the context of the time since introduction of the policy. A consistent longitudinal or panel-data assessment could lead to a better understanding related to the efficacy, efficiency and effectiveness of SSB taxation in Chile. For instance, Bauer et al. (2005) carried out a longitudinal assessment of the impact of smoke-free worksite policies on tobacco-use and found that these policies helped in cigarette consumption and smoking cessation. Similar studies could help in assessing the efficacy, its determinants and barriers, in relation to the SSB taxation policy in Chile.

Equivalent to the challenging task of policy evaluation is the task of policy formulation. It is well acknowledged that no single policy can solve complex social issues (Mozaffarian et al., 2018). In the case of Chile thus, ideally, a policy package could be designed to address the problem of SSB consumption. Mozaffarian et al. (2018) list an exhaustive list of policy categories which may be considered as per their applicability in the Chilean cultural context. Moreover, the crucial component of the intergenerational component of

obesity among Chileans must be borne in mind while designing policies. Early care and school settings must be recognized as integral part of the Chilean strategy to reduce SSB consumption. Furthermore, recurrent evaluation of policies must be considered a top priority for it keeps the policy debate active informing amendments and recommendations in a dynamic manner. Khan and Rahman (2017) discuss three major stages of policy evaluation: formulation, implementation and post implementation, emphasizing the importance of objectivity and rigorous analysis methods throughout the three stages. Similar practices may be adopted by Chilean government with respect to the policy package evaluation.

Reduction of SSB consumption in Chile presents significant complex challenges which may not be solved solely by taxation. Taxation may limit people's ability to purchase SSBs, but it may be too glacial in effecting the behavioural change required to combat the considerable threat of obesity in Chile. Moreover, taxation policies lacking a comprehensive understanding of sociological, psychological and behavioural factors associated with the high consumption of SSB in Chile could be inadequate and limited in their success. Therefore, findings based on the fundamental understanding of these factors would be integral to formulating new, more effective policies, or alter the existing ones, in order to tackle the rising SSB consumption in Chile.

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