

Survey of Food Product Labels to Assess Compliance With Labelling Provisions in Canada

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Abstract

Background: Food product labels are a public health tool that guides consumers in making food choices. In December 2016, the Government of Canada amended the *Food and Drug Regulations* (i.e., nutrition labelling, list of ingredients, and food colour requirements). Health Canada and the Canadian Food Inspection Agency (CFIA) developed an implementation plan that focussed on education and compliance promotion of the new labelling provisions (Canadian Food Inspection Agency, 2022a). This progressive approach allows regulated parties to transition to the new changes gradually. As of December 15, 2021, the former regulations are no longer in effect, and the new labelling requirements apply. This study will survey food labels on products available in the marketplace, regarding the current labelling requirements, and determine whether there is a discrepancy in properly labelled food products between chain versus independent grocery stores of different ethnicity.

Methods: Primary data was collected by surveying the nutrition facts table of selected pre-packaged food products from 15 selected retail stores in Metro Vancouver, categorized by store type (i.e., non-ethnic chain grocery stores, ethnic chain grocery stores, and independent ethnic grocery stores). The type of products selected included: condiments, beverages, dry snacks, and confectioneries. Chi-square tests were used to determine whether or not there was an association between food products from different grocery store types, regarding compliance with the new labelling provisions in Canada. Three separate data sets, categorized by store type, were analyzed for their inclusion of the current labelling format requirements based on their nutrition facts tables.

Results: Of the total 300 samples surveyed, 69.0% (n=207) of food products complied with the new labelling provisions, and 31.0% (n=93) were not in compliance. The proportion of products in compliance from each store type was as follows, 74.0% from non-ethnic chain grocery stores, 79.0% from ethnic chain grocery stores, and 54.0% from independent ethnic grocery stores. The study found no association between food products from chain grocery stores of ethnic versus non-ethnic type ($P = 0.4044$). However, there were significant associations between food labelling compliance of products from (non-ethnic and ethnic) chain grocery stores versus independent ethnic grocery stores ($P = 0.0032$ and 0.0002 , respectively).

Conclusion: This study identified that not all regulated parties are in accordance with the current labelling requirements of Canada, and that there is a discrepancy in the retail of properly labelled pre-packaged food products between chain versus independent grocery stores. In addition, the findings demonstrated that the type of ethnicity of stores did not significantly impact the frequency of food labelling compliance. The results may be used by CFIA to investigate further the disparity of labelling compliance between products sold in chains versus independent grocery stores and make any educational or promotional changes with regulated parties to improve compliance. Consequently, increased

compliance with the food labelling requirements can better ensure consistency of nutritional information and be made available for consumers to make easy and healthy food choices.

Keywords: food label, nutritional facts table, pre-packaged food products, grocery stores

Introduction

As food choices in the market expand and grow in complexity over the years, proper nutrition knowledge and understanding of products are essential for consumers to make informed and healthful decisions (van der Merwe et al., 2014). Therefore, nutrition labels act as a public health tool to guide individuals and communities in making food choices (PAHO, 2022). However, the intent of using food labels as a source of nutritional information for consumers can be disrupted in situations such as labelling errors, content confusion, and format non-uniformity. Nutritional label formats may also vary across the globe as different countries adopt different approaches to food labelling. With Canada's wide range of domestic and imported food products available in the market, discrepancies between food labelling schemes can occur. Therefore, science-based regulations, guidelines and policies, including those related to the labelling of food sold in Canada, are established by Health Canada (Health Canada, 2022a). Food labelling requirements are then regulated by Canada's Acts and Regulations to protect Canadians from health hazards and fraud in food sale products (Health Canada, 2022a).

In December 2016, the Government of Canada made amendments to the *Food and Drug Regulations* (nutrition labelling, list of ingredients, and food colour requirements) to support Canadians in making healthier, more informed choices (Canadian Food Inspection Agency, 2022a). Health Canada and the Canadian Food Inspection Agency (CFIA) (Canadian Food Inspection Agency, 2022a) developed an implementation plan that involves a five-year transition period that includes 3

phases, focusing on education and compliance promotion of the new labelling provisions (Canadian Food Inspection Agency, 2022a). The new labelling requirements apply to both domestic and imported pre-packaged food products in Canada, as indicated in the Canadian *Food and Drug Regulations*. With the progressive approach of implementing the new labelling provisions in Canada, the level of compliance in food labelling throughout the transition is worth investigating.

Literature Review

Nutrition and Health

As stated by the World Health Organization (WHO), "excessive consumption of sugars, fats, and sodium is a public health concern" that contributes to non-communicable diseases such as obesity, diabetes, hypertension, and vascular, heart and brain diseases, and kidney (Health Canada, 2022a). About 44% of deaths in the Americas are due to increased blood pressure, increased sugar levels, and obesity and overweight (Health Canada, 2022a). Unhealthy diets among consumers are largely influenced by the widespread availability and retailing of processed food and drink products that are excessive in sugars, fats, and sodium (Health Canada, 2022a). Heart disease ranks as the second leading cause of death in Canada, with over 50,000 fatalities yearly (Government of Canada, 2022b). The rate of obesity is also on the rise among children and youth in Canada, which nearly tripled in the last three decades (Government of Canada, 2022a). Moreover, in 2017, an estimated 11 million deaths across 195 countries were attributable to dietary factors (Afshin et al., 2019). The quality of diet has

significant associations with non-communicable chronic diseases. Thus, dietary interventions such as implementing food labelling policies and regulations promote better healthful food choices and mitigate food-related health risks.

Accessibility of Nutritional Information

The availability of nutritional information on food products allows consumers to gain awareness of content levels for key nutrients (i.e., fat, sugar, and salt). Previous literature investigated the effects of nutrition labels and their influence on consumer behaviour in making food choices. For instance, one study found that participants (i.e., consumers) who had access to added sugars information demonstrated healthier purchasing behaviours and were less likely to purchase high added sugars products (Kim et al., 2021). In the same study, participants who avoided access to the added sugars information were more inclined to purchase unhealthy products (in terms of added sugars levels) than those with information access (Kim et al., 2021). This finding has similar results to another study which found that higher calorie intake tends to occur among participants who avoided calorie information (Thunström et al., 2016). This demonstrates that nutritional labelling of foods positively affects consumers and is likely to encourage healthier food decisions. Likewise, Health Canada has proposed strategies to improve healthy eating information and allow easier comparison of similar products for consumers to make healthier choices (Health Canada, 2022b).

Nutrition Label Formats

Food labelling formats may vary among domestic and imported goods as countries follow different labelling schemes to present a product's nutritional profile. However, studies have found that the existence of multiple food

labelling systems in the market creates confusion and limits the effectiveness of food labels in guiding consumers to better evaluate and compare the nutritional values and composition of foods (Hobin et al., 2017). For instance, in the United Kingdom, a traffic light approach is often used to convey nutritional information, highlighting the sodium, sugar and saturated fats content as high (red), medium (amber), or low (green), on front-of-package nutrition labels, allowing consumers to effectively see the information (British Nutrition Foundation, 2022). Similarly, countries of the European Union use Nutri-Score, which is based on a colour code scheme that assigns a score on nutritional quality ranging from A to E, each score with its own colour (UNESDA, 2022). The United States, on the other hand, uses a less captivating format for labelling but still demonstrates to be informative (FDA, 2022). Consequently, with the constant importing and exporting of international food products worldwide, “multiple [nutrition labelling formats] co-exist within many countries”, including individual food retail chains (Draper et al., 2013). In a study, the participants were interviewed, and revealed that product comparisons using different label formats were challenging and made it difficult to judge the relative healthiness between products (Draper et al., 2013). When a pair of products differ in label formats and lack common elements such as text, difficulties in understanding and misinterpretation among participants may occur (Draper et al., 2013). Therefore, section A.01.044(1) of Canada's *Food and Drug Regulations* controls the sale of imported food to conform with the legislation by relabelling or modifying food nutrition labels, as necessary, to allow the product to be sold lawfully in Canada (Government of Canada, 2022c). Given the multiple formats used on food packages and the large volume of imported food products available in the Canadian market, the country's

new labelling provisions can help encourage and reestablish label format consistency and uniformity to help consumers understand nutritional information more effectively.

As stated by the CFIA (Health Canada, 2022a), the new labelling provisions in Canada have been amended based on feedback from consumers and stakeholders, which include changes to the nutrition facts table (Figure 1), the serving size, the information on sugars and sweeteners, the list of ingredients, and the addition of Front-of-package nutrition labelling (Health Canada, 2022a).

Legislation for Nutrition Labelling in Canada

Nutrition labelling became a mandatory requirement for all pre-packaged foods sold in Canada on December 12, 2007 (Health Canada, 2022c). The regulations and compliance of nutrition labelling is managed federally by Health Canada and the Canadian Food Inspection Agency (CFIA). Health Canada is responsible for developing health and safety related policy and regulatory requirements, and the CFIA is responsible for the enforcement of them (Government of Canada, 2022d). The key acts and regulations that specify the food nutrition labelling requirements in Canada are the *Food and Drug Act* (FDA) and the *Food and Drug Regulations* (FDR) (Canadian Food Inspection Agency, 2022b). The FDA protects Canadians against health hazards and fraud in the sale of foods of either domestic or imported products (Canadian Food Inspection Agency, 2022b). The FDR prescribes, among other things, the labelling of all pre-packaged foods, including requirements for nutrition labelling, ingredient list, durable life dates, nutrient content claims, health claims and foods for special dietary use (Canadian Food Inspection Agency, 2022b). In the case that a pre-packaged food labelling does not meet the requirements of the FDR, it is a violation of the legislation.

According to section 5(2) and 31.1 (1) of the FDA, “an article of food that is not labelled or packaged as required by, or is labelled or packaged contrary to, the regulations” shall be deemed a contravention that may subject to fine

or imprisonment or to both (Government of Canada. (2022d).

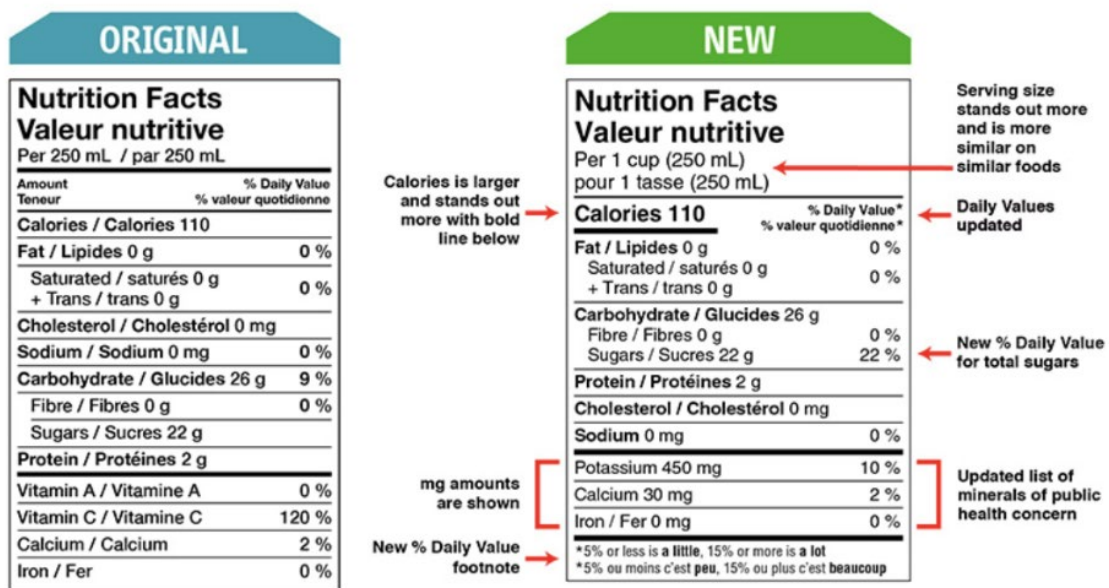
Current Labelling Regime

Health Canada has amended the food labelling regulations and standards to improve the nutrition facts table and list of ingredients to make them easier to understand (Canadian Food Inspection Agency, 2022a). This is a progressive approach to the transition, allowing regulated

compliance, the relevant regulated parties are to develop a corrective action plan to meet compliance by December 14, 2023 (Canadian Food Inspection Agency, 2022a).

Although regulated parties should apply the new labelling provisions into practice, it is not guaranteed that all parties are, or will be, effectively taking action. Moreover, despite legislation regulating food labelling, the availability of proper labelling for consumers is also dependent on food retail suppliers' or

Figure 1. Nutrition facts table changes, including sugars information (Health Canada, 2022a)



parties (e.g., food processors, stakeholders, and partners) to adjust to the new changes and requirements. As of December 15, 2021, the former regulations are no longer in effect, and the new labelling requirements apply (Canadian Food Inspection Agency, 2022a). This marked the start of Phase III, the first year following the end of the transition period, which ended on December 14, 2022 (Canadian Food Inspection Agency, 2022a). Following this phase, the CFIA will verify compliance and apply enforcement discretion in situations of non-compliance (Canadian Food Inspection Agency, 2022a). For instance, in the case of a report of non-

vendors' level of compliance and ability to provide products that meet regulation standards. Therefore, food retailers could potentially carry regulated food products that have non-compliant food labelling, raising the question of whether regulated parties are effectively informed of the current regulations.

Purpose of Study

The purpose of this study is to survey food labels on products available in the marketplace and compare whether regulated parties (e.g., food processing and distribution companies) are following the current labelling

requirements, and whether there is a discrepancy in properly labelled food products between chain versus independent grocery stores (e.g., Superstore, Walmart, and Safeway) or ethnic grocery stores.

Methods

Materials Used

The materials used to complete this research project included a camera (i.e., a cell phone camera) to take the photos and collect the data, a computer with Microsoft Excel to input the data, and a statistical software (i.e., NCSS 2023) to complete the analysis of the collected data. Information regarding the current food labelling changes was obtained from Health Canada's website as a guideline for identifying compliance with food labelling requirements (Health Canada, 2022a). The photos used included various pre-packaged food products, which were all taken in-person firsthand by the researcher.

Description of Standard Methods

The methods of data collection involved visiting 15 selected retail stores in Metro Vancouver, categorized by store type (i.e., non-ethnic chain grocery stores, ethnic chain grocery stores, and independent ethnic grocery stores). The selected stores were located within 13 km in proximity from the British Columbia Institute of Technology (BCIT), Burnaby Campus at 3700 Willingdon Avenue, Burnaby, BC V5G 3H2, requiring approximately 20 minutes or less in travel duration. The following stores, as listed in Table 1, were visited between February 1st and February 10th, 2023.

Primary data, in the form of photos, were collected from the stores by surveying the nutrition facts table of selected pre-packaged food products. Photographs taken included all

sides of the food packaging to ensure the necessary information was captured (i.e., product name, product type, and nutrition facts table). Information from the photos was inputted into a Microsoft Excel spreadsheet and then exported to NCSS 2023 for statistical analysis. Chi-square tests were used to determine whether or not there was an association between food products from different grocery store types regarding compliance with the new labelling provisions in Canada. Three separate data sets, categorized by store type, were analyzed for their inclusion of the current labelling format requirements based on their nutrition facts tables. Selected products that did not correctly exhibit a nutrition facts table with each of the required components (i.e., serving size, calories, % daily values (% DV), % DV for total sugars, updated list of minerals of concern, mineral amounts in milligrams (mg), and the footnote about % DV), as shown in Figure 1, were deemed as non-compliant. For example, products that were in non-compliance would include products with no nutrition facts table available or have a missing component, like the % DV for total sugars. The products were selected from the following categories: condiments, beverages, dry snacks, and confectioneries. Therefore, the product description on the packaging of each sample was analyzed to ensure that the product can be classified as one of the four selected categories.

Table 1. Data collection locations of selected stores.

Store Type	Store Name	Address
Non-Ethnic Chain Grocery Stores	The Real Canadian Superstore	4700 Kingsway #1105, Burnaby, BC V5H 4M1
	Save-On-Foods	4469 Kingsway, Burnaby, BC V5H 2A1
	Whole Foods	4420 Lougheed Hwy., Burnaby, BC V5C 3Z3
	Safeway	4440 E Hastings St, Burnaby, BC V5K 2A9
	Walmart	3585 Grandview Hwy, Vancouver, BC V5M 2G7
Ethnic Chain Grocery Stores	PriceSmart Foods	4650 Kingsway, Burnaby, BC V5H 4L9
	H Mart Coquitlam	329 North Rd #100, Coquitlam, BC V3K 3V8
	Hannam Supermarket	4501 North Rd #106, Burnaby, BC V3N 4R7
	Sungiven	4106 Hastings St, Burnaby, BC V5C 2J4
	Fruiticana	6257 Fraser St, Vancouver, BC V5W 3A3
Independent Ethnic Grocery Stores	Assi Market	5593 Kingsway, Burnaby, BC V5H 2G3
	Mabuhay Supermarket and Garden Produce	3369 Kingsway #1, Vancouver, BC V5R 5K6
	Chong Lee Market	6399 Victoria Dr, Vancouver, BC V5P 3X5
	88 Supermarket	2611 E 49th Ave, Vancouver, BC V5S 1J9
	King's Market	6218 Kingsway, Burnaby, BC V5J 4W6

A total of 300 product samples were analyzed, with 100 products from each store type.

Inclusion and Exclusion Criteria

The selected store types were distinguished based on their classifications as chain versus independent, and ethnic versus non-ethnic grocery stores. For this study, a chain store was defined as a store that is part of a group of similar stores selling the same type of product, and that are all owned and operated by the same organization. In contrast, an independent store is defined as a business that is individually owned, with no more than 2 store locations. An ethnic grocery store was defined as one that retails mostly products of specific ethnic groups (e.g., Chinese, Filipino, Indian, Korean, Vietnamese, etc.). On the other hand, a non-ethnic grocery store retails products of no specific ethnic group.

The products of pre-packaged food that were surveyed included condiments (e.g., dips, sauces), beverages, dry snacks (e.g., chips, crackers, cookies, granola bars), and

confectioneries (e.g., chocolates, candies). pre-packaged food products that did not classify as any of the four selected product types, such as deli meats, dairy products, and raw meats, were excluded because these products were either low stock or not available in all grocery stores, which would have prevented the ability to gather an adequate number of samples per category. All photographs of food products were analyzed to ensure a variety of manufacturers were included in the data and that any identical products were excluded.

Statistical Analysis

Description of Data

The data collected for this study was binary nominal data; qualitative data that represents the presence of compliance (“yes” or “no”) for pre-packaged food products. The presence of compliance was determined based on whether the nutrition facts table of the product meets the criteria of the current labelling changes in Canada, as shown in Figure 1.

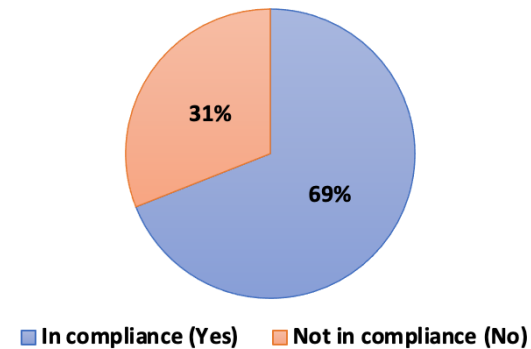
The statistical software that was used for analysis was NCSS 2023. Results obtained from photos taken of pre-packaged food labels were inputted into Microsoft Excel to generate preliminary descriptive statistics, while NCSS calculated inferential statistics used to determine the significance of the research. Information from each store type category (non-ethnic chain, ethnic chain, and independent ethnic) was collected, with 100 data points each, and exported into NCSS for analysis.

Descriptive Statistics

For the descriptive statistics, the presence of nutrition label compliance was assessed. Based on the new changes to the nutrition facts table in Canada, the components and information that was examined on the selected products' nutrition facts table included serving size, % daily values (% DV), % DV for total sugars, list of nutrients, nutrient amounts in milligrams (mg), and footnotes regarding % DV (see Figure 1).

The results for all store type categories yielded 69.0% (n=207) of food products in compliance with the new labelling provisions, whereas 31.0% (n=93) were not in compliance, as shown in Figure 2.

Figure 2. Products in compliance with current labelling provisions in Canada, all store type categories.



For each store type category, 100 samples were surveyed. The results included

food products from non-ethnic chain grocery stores, which yielded 74.0% (n=74) of food products in compliance with the new labelling provisions, whereas 26.0% (n=26) were not in compliance. From ethnic chain grocery stores, 79.0% (n=79) of food products were in compliance with the new labelling provisions, whereas 21.0% (n=21) were not in compliance. As for independent ethnic grocery stores, 54.0% (n=54) of food products were in compliance with the new labelling provisions, whereas 46.0% (n=46) were not in compliance. Results are represented in Figure 3 below.

Figure 3. Number of products in compliance with current labelling provisions in Canada among different grocery store types.



Inferential Statistics

The data on labelling compliance were analyzed in a Chi-square test to determine if there was an association between labelling compliance of food products from different types of grocery stores. A total of three Chi-square tests were run. A breakdown of the three tests is as follows:

- Food products from *non-ethnic chain grocery stores* versus *ethnic chain grocery stores* regarding compliance with the new labelling provisions in Canada.
- Food products from *non-ethnic chain grocery stores* versus *independent ethnic*

grocery stores regarding compliance with the new labelling provisions in Canada.

- Food products from *ethnic chain grocery stores* versus *independent ethnic grocery stores* regarding compliance with the new labelling provisions in Canada.

The Chi-square test is often used to examine relationships between categorical variables (Statistics Solutions, 2018). A summary of the data is shown in Table 2.

Analysis of the data concluded that there was no association between food products from non-ethnic chain grocery stores and food products from ethnic chain grocery stores regarding food labelling compliance with the new labelling provisions in Canada. However, there were significant associations between food labelling compliance of products from (non-ethnic and ethnic) chain grocery stores and products from independent ethnic grocery stores in Metro Vancouver.

Discussion

The main objective of this study was to determine whether nutrition labelling compliance for pre-packaged food products retailed in the marketplace is associated with the type of grocery store (i.e., chain versus independent or ethnicity). Based on the results (in Figure 3 and Table 2), it was revealed that the proportion of samples in compliance with the current food labelling provision was consistent and showed no significant difference between the ethnicity of chain grocery stores. For each category of chain grocery stores (i.e., non-ethnic and ethnic), approximately three-quarters of their total samples, 74.0% and 79.0%, respectively, were in compliance. This demonstrates that the ethnicity of the grocery store had no influence on the labelling compliance of pre-packaged products being retailed. Although there is no previous research

regarding this topic, the outcome of this study can be interpreted as a positive result since the majority of the selected samples were in compliance with the labelling requirements. The results were in favour of the progressive implementation of labelling changes, suggesting that regulated parties, such as food processors and manufacturers, are making the necessary changes and updates to meet the new labelling requirements outlined by CFIA (Canadian Food Inspection Agency, 2022a).

On the other hand, the collected data indicated a significant difference in food labelling compliance between independent ethnic grocery stores and chain grocery stores of any ethnicity (as shown in Figure 3 and Table 2). This study showed that the type of store management (independent versus chain) had an influence on the compliance of labelled pre-packaged products sold at grocery stores. This finding can be interpreted as a negative outcome because the number of selected samples that were in compliance, from independent ethnic grocery stores, were found to be significantly

fewer compared to both types of chain grocery stores.

A possible explanation for the discrepancy between the number of products in

work interprovincially or internationally, and more closely with CFIA. Major distributors would have stricter demands to meet legislative requirements. Therefore, chain grocery stores

Table 2. Summary of inferential statistics.

Ho and Ha	Test used	P-value	Conclusion
<p>Ho: there is no association between food products from non-ethnic chain grocery stores and food products from ethnic chain grocery stores regarding compliance with the new labelling provisions in Canada.</p> <p>Ha: there is an association between food products from non-ethnic chain grocery stores and food products from ethnic chain grocery stores regarding compliance with the new labelling provisions in Canada.</p>	Chi-Square	0.4044	Do not reject Ho and conclude that there is no statistically significant association between food products from non-ethnic chain grocery stores and food products from ethnic chain grocery stores regarding compliance with the new labelling provisions in Canada. No likely beta error as the P-value is well above 0.05.
<p>Ho: there is no association between food products from non-ethnic chain grocery stores and food products from independent ethnic grocery stores regarding compliance with the new labelling provisions in Canada.</p> <p>Ha: there is an association between food products from non-ethnic chain grocery stores and food products from independent ethnic grocery stores regarding compliance with the new labelling provisions in Canada.</p>	Chi-Square	0.0032	Rejects Ho and concludes that there is a statistically significant association between food products from non-ethnic chain grocery stores and food products from independent ethnic grocery stores regarding compliance with the new labelling provisions in Canada. No likely alpha error as the P-value is well below 0.01.
<p>Ho: there is no association between food products from ethnic chain grocery stores and food products from independent ethnic grocery stores regarding compliance with the new labelling provisions in Canada.</p> <p>Ha: there is an association between food products from ethnic chain grocery stores and food products from independent ethnic grocery stores regarding compliance with the new labelling provisions in Canada.</p>	Chi-Square	0.0002	Rejects Ho and concludes that there is a statistically significant association between food products from ethnic chain grocery stores and food products from independent ethnic grocery stores regarding compliance with the new labelling provisions in Canada. No likely alpha error as the P-value is well below 0.01.

compliance from independent versus chain grocery stores may be that suppliers of chain grocery stores are often major distributors that

are likely more proactive and well-informed about updates such as new labelling requirements. In addition, with CFIA’s guidance

and compliance promotion, these major distributors are more likely to carry out the transition of the new labelling provisions accordingly.

In contrast, the amount of products in non-compliance sold at independent ethnic grocery stores suggests that the store's products may have potentially come from a variety of suppliers or distributors that are smaller or lesser-known than those who distribute to chain grocery stores. Thus, smaller or lesser-known distributors may not be as informed or educated about the updated labelling regulations. In addition, the number of products in non-compliance could potentially be the result of inventories coming from other unknown routes that are not regulated. In consideration of independent grocery stores being typically smaller in capacity, they may lack effective procedures in regards to checking old inventory or they may have slower inventory turnover.

Limitations

There were limitations regarding the methodology of sample collection and analysis. As previously stated, to satisfy the external validity of this study, a variety of product types were selected (i.e., condiments, beverages, dry snacks, and confectioneries). However, despite the approach to ensure variety among the collected samples, the product brand of each sample was not considered. The lack of exclusion of products with the same brand could have skewed the results if a significant number of the selected samples were manufactured by the same company. Products from the same company will likely share the same food labelling format. This limited the range of different companies that were surveyed and assessed for compliance of food labelling. Therefore, the collected samples from this study do not reflect the compliance level of all existing regulated parties involved in food labelling of

products retailed in the market. To improve this study, an exclusion for the same manufacturing company and brand of selected products should be considered, to optimize the validity of the results

The results could still be extrapolated to all grocery stores of each store type (i.e., non-ethnic chain, ethnic chain, and independent ethnic) because the selected samples were reflective of common products retailed in the marketplace. It is typical for distributors or manufacturing companies to supply various products to be sold at grocery stores, which would naturally lead to an inventory of multiple products of the same brand. Consequently, this study's resulting discrepancy in properly labelled food products in the marketplace remains reliable and can be generalized to different grocery stores of either independent or chain types in Metro Vancouver.

Knowledge Translation

The resulting information from this research can be translated into changes at the retail level (e.g., supermarkets, grocery stores, department stores), such as promoting and educating staff on the current labelling requirements to discourage the supplies of non-compliant labelling of food products and become more vigilant in making any necessary changes (i.e., labelling format) to meet requirements. In addition, at the distribution and supply level, the findings can translate to further education, promotion, and enforcement of the new regulations for independent retailers and lesser-known suppliers/importers by the CFIA to ensure all regulated parties are well-informed and in compliance. CFIA could also consider additional methods that are more effective in keeping regulated parties of smaller businesses well-informed and in compliance with the current regulation as larger businesses do.

Future Research

Based on this study, the following projects may be considered for future research:

- Survey food labelling compliance between imported versus not-imported pre-packaged food products in the marketplace.
- Survey regulated parties (e.g., processing, manufacturing, distributing, and supplying companies) to determine their knowledge about the current labelling provisions.

Conclusion

This study determined that not all regulated parties (e.g., distributors and supplying companies) are following the current labelling requirements of Canada, and that there is a discrepancy in the retail of properly labelled pre-packaged food products between chain versus independent grocery stores. In addition, the findings demonstrate that the type of ethnicity of stores does not significantly impact the frequency of food labelling compliance. Nonetheless, the results verify the amount of compliance among products currently available in the marketplace and help recognize what areas still require the application of enforcement discretion in the case of non-compliance. The results may be used by CFIA to further investigate the disparity of labelling compliance between products sold in chain grocery stores and independent grocery stores, and make any educational or promotional changes with regulated parties to improve compliance. By increasing compliance with the food labelling requirements, consistency of nutritional information can be ensured and made available for consumers of Metro Vancouver to make easy and healthy food choices.

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Competing Interest

The author declares that they have no competing interests.

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