ANALYZING LOWE'S FAILURE IN CANADA

FROM A GEOGRAPHICAL PERSPECTIVE

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Abstract

This study examines the failure of American home improvement retailer Lowe's in Canada from a geographic perspective. It analyzes Lowe's operating strategy, financial performance, and store share, and uses an optimized market demand calculation formula and the Huff Model to simulate market demand and conduct trade area analysis. Results indicate an unequal distribution of the home improvement market in Canada, characterized by intense competition in certain provinces. Yet, opportunities for market entry and store optimization remain evident. Most Lowe's stores were developed in locations with low demand and high competition, compared to its main competitor The Home Depot. These findings may have contributed to helping understand why Lowe's exit from the Canadian market and provide valuable insights for international retailers on market entry and operations. The proposed formula may also improve the accuracy of retailers' consumer spending forecasts.

Keywords: Business Geography, Internationalization of Retailing, Spatial Interaction

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Table of Contents

List of Tables

List of Figures

List of Appendices

Appendix A

Appendix B

Chapter 1: Introduction

1.1 Statement of the Research Problem and Study Objectives

Due to its close physical and cultural proximity to the United States, Canada has always been a convenient market for American retailers to test their internationalization strategies. In the last two decades, a number of high profile American retailers entered Canada and established themselves as market leaders in their respective retail subsectors. These include Walmart, Home Depot, Business Depot, Costco, Best Buy, Michaels, and Toys'R Us. They led to the demise of many long-standing domestic retailers.

Not all American retailers have been equally successful in Canada, though. Some had to reduce its operation scales (such as Best Buy), and others closed their operations entirely and retreated to their home country (such as Sam's Club, Target, and Office Place). In the literature on retail internationalization, this phenomenon is known as the "divestment of international retailers from host countries". A variety of factors account for this kind of divestment, including, but not limited to, misinformed corporate decision to enter a foreign country, unsustainable capital resources, poorly managed supply chains, insufficient market demand, saturation of retail supplies with too much competition, and inappropriate store location with mismatched market conditions (Benito & Welch, 1997; Burt et al., 2019; Coe et al., 2017; Etgar & Rachman-Moore, 2007).

The latest example of a failed American retailer in Canada is Lowe's - the second largest home improvement and building material retailer in the world. Lowe's entered Canada in 2007, when it opened its first Canadian store in the Province of Ontario. After nearly a decade of expansion through organic growth, it acquired RONA in 2016, the largest domestic home improvement retailer in Canada, exceeding The Home Depot to become the largest home improvement retailer in the country, with over 600 stores of varying formats in the ten provinces. For quite some time, there were numerous indications that Lowe's performance was weak or even poor. In 2018 and 2019, respectively, Lowe's announced the closure of 27 and 34 underperforming stores in Canada to optimize its store network (RONA Inc., 2018, 2019). Just six years after the acquisition, Lowe's announced the decision in 2022 to exit the Canadian market by selling its entire Canadian operation.

The home improvement and building material industry, in which Lowe's operates, had a total operating income of 50.8 billion Canadian dollars in 2021, making it the sixth-largest retail market in Canada. It was also the second fastest-growing subsector of the retail industry between 2016 and 2021, with a revenue growth rate of 42.9% (see Appendix A). Lowe's business should have benefited from such a thriving market, particularly in an industry with such a high growth rate, but unfortunately, it could not capitalize on this market growth. Unlike Best Buy (Canada) which closed its Future Shop banner stores but retained all the Best Buy brand stores in Canada, Lowe’s closed its entire Canadian operation and sold all the RONA stores to a private equity firm - Sycamore Partners (RONA Inc., 2022). This suggests that the failure of Lowe’s in Canada is attributed to different factors from those that were responsible for the setback of Best Buy.

Although scholars have examined the various reasons for the failure of international retailers, most existing studies concentrate on corporate transnational strategies, technology innovations, financial resources, and cultural barriers (Bianchi, 2006; Buckley & Casson, 2021; Burt et al., 2003; Gandolfi & Štrach, 2009; Gao, 2013; Megits & Schuster, 2015). Few studies examined the failures from a geographical standpoint. The phrase "location, location, location" has long stressed the significance of store location in the retail industry (Brown, 1992). For a brick-and-mortar retail company like Lowe's, the importance of location is self-evident. This research paper aims to fill this gap through a case study of Lowe's operations in Canada. Specifically, this study investigates whether the Canadian market is large enough to support three large chains of home improvement retailers - The Home Depot, Lowe’s and RONA; and whether the Lowe’s stores were developed at disadvantaged locations with mismatched market conditions or with too many competitors within their trade areas. Associated with this study are four research objectives:

1. to review the development timeline of Lowe's to reconstruct its operation strategies, and financial performance.

2. to examine the market distribution and store share of Lowe's and its competitors in Canada.

3. to simulate demand levels in home improvement materials in Canada.

4. to compare the demographic characteristics and market conditions of Lowe's stores and its competitors in the trade areas.

It should be pointed out that geographical factors offer only partial explanations for the success or failure of an international retailer. A more comprehensive analysis is required to provide a complete picture, but given the limited space of this MRP, an examination of geographical factors is chosen as the study focus.

1.2 Study Area

The choice of the study area (see Figure 1) follows the approach of retail location analysis in marketing geography to understand the relationship between retailers and consumers in space. Location analysis is done at two levels of geography: the entire country, and a case study of the Toronto Census Metropolitan Area (CMA). At the national level, the spatial distribution of Lowe's and competitor stores is examined with the aim of reconstructing Lowe's store deployment strategy geographically to understand competition and market saturation in different provinces and CMAs, and to calculate market demand. In the Toronto CMA case study, trade areas are demarcated for Lowe's and the competitor stores and their market conditions are compared to identify spatial differences.

The Toronto CMA is chosen as the case study area for two reasons: (1) its population size and (2) the intensity of competition within it. Canada is a nation with a very high urbanization rate, with 74% of the population living in the census metropolitan areas (Statistics Canada, 2022). There are six CMAs with populations exceeding one million, representing 53.3 % of the total population. It is evident that the population distribution in Canada is extremely unequal. The Toronto CMA has the largest population of all CMAs (6.2 million) with a total area of 5,900

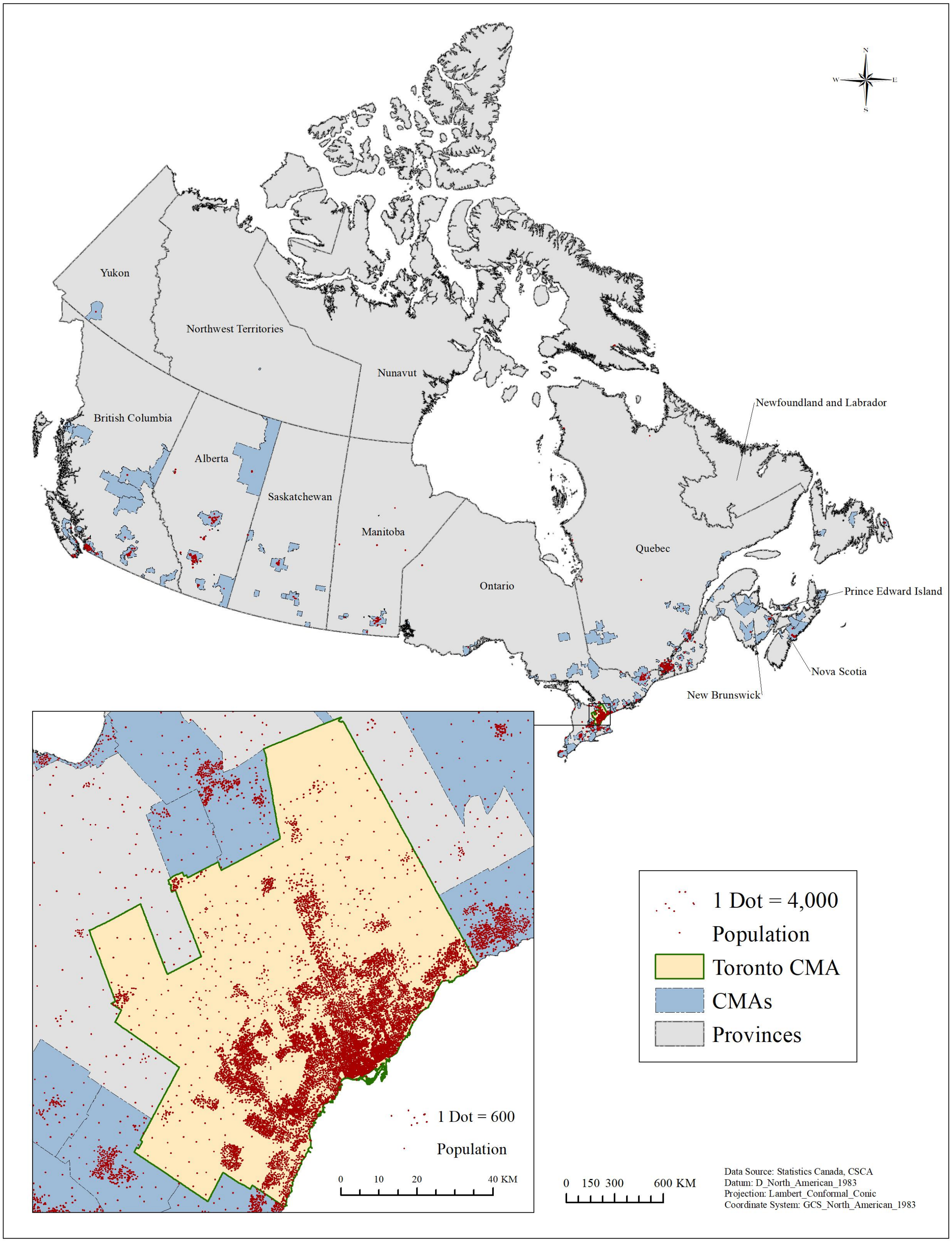


Figure 1. The Study Area and Population Distribution in 2021

square kilometres and a population density of 1,051 persons per square kilometre in 2021 (see Appendix A). It is the largest consumer market in Canada and the home of choice for a large number of new immigrants. The large population with continuous newcomers supports a huge long-term supply and demand chain with retail companies in the region. In addition, the Toronto CMA is the most competitive area in Canada, with more retail businesses located here than in other CMAs, and it is also where major retailers opened their first stores in Canada making the region an ideal study area. In order to ensure the validity of the study, areas bordering the Toronto CMA (the remaining Ontario regions) are also included in the spatial model's execution.

1.3 Organization of the Paper

This research paper is organized into six chapters. Following the Introduction is a comprehensive review of the relevant literature on the internationalization of retailing, and omnichannel retailing, which is important for identifying the reasons behind the divestment of international retailers. A detailed explanation of the data and methods utilized in the study is then presented. Chapter 4 is a brief introduction to Lowe's history and an analysis of its financial performance and operating strategy to comprehend its distress and subsequent divestment. In Chapter 5, the extent of Canada's home improvement market, store share, and market demand are calculated, and the geographical locations of Lowe's stores are analyzed and compared with those of its competitors. In Chapter 6, conclusions, limitations and suggestions for future research are discussed.

Chapter 2: Literature Review

This chapter aims to establish a conceptual framework for the research by reviewing relevant literature, and the content is divided into two parts. The first part focuses on the life cycle of internationalization of retailing, by leveraging the retail planning process delineated by Wang and Du (2021), this study adapts and constructs a flowchart of the international retail life cycle (see Figure 2), encompassing the motivations for international retailing, market selection, entry mode, competitive strategy, and exit. Specifically, domestic companies must initially assess whether expansion is necessary and identify the target market. If the decision is made to enter the international market, the company must ascertain its motivation before undertaking market selection, market analysis, and determining its entry mode. Subsequently, the company must secure its competitive advantages through judicious competitive strategies and continually monitor performance to ascertain the next step in its enterprise development. In extreme situations, companies must decide whether to exit the market via redeployment or divestment.

The second part is the impact of new retail on the retail industry, especially omnichannel retail in the home improvement industry. With the rapid development of e-commerce today, understanding the new retail model will help predict industry trends, opportunities, and challenges.

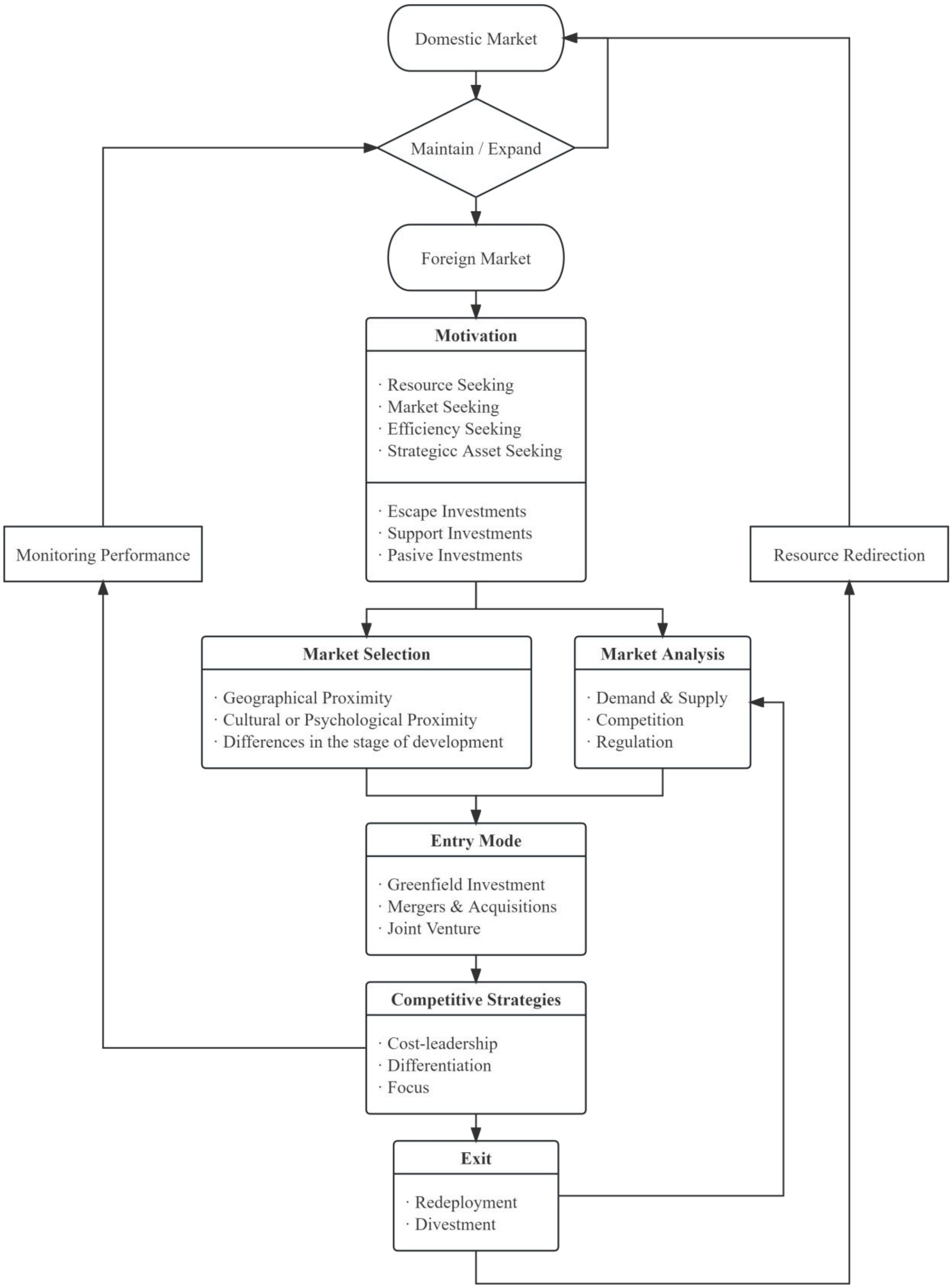


Figure 2. The Internationalization of Retailing Process

2.1 Internationalization of Retailing

International retailing has become increasingly prevalent over the past few decades, driven by market globalization, technological advancements and altering consumer behaviour. There are many factors that affect a company's internationalization. Different motivations pursue different goals and require different resources. Among them, the "push" or "pull" factors proposed by Kacker (1985) are the most classic; that is, problems such as slow growth or market saturation in the domestic market push companies to expand overseas, and the attractiveness of overseas markets pulls companies to invest. More specifically, four main/active motives (resource seeking, market seeking, efficiency seeking and strategic asset seeking) and three temporary/passive motives (escape investment, support investment and passive investment) can be distinguished (Dunning, 1993). Although these motivations are usually determined by the company's current business environment, the context of the times, and geographic factors, positive motivations are more common (Quinn, 1999).

However, regardless of a company's motivation for international retailing, market selection is an unavoidable topic. The decision to enter a particular international market is multifaceted and influenced by a variety of factors, such as the geographic, cultural or psychological proximity of the target market, and differences in the stage of retail structure development between the home and target markets (Burt, 1993). To minimize the risk of failure, retailers typically select markets with cultural similarities or geographical proximity to their native market (Li & Guisinger, 1991). European retailers, for instance, tend to expand in Europe, North America, and Australia, while U.S. retailers primarily expand into Canadian and European markets (Myers & Alexander, 1996, 1996; Vida, 2000). However, cultural or psychological proximity can be ambiguous and susceptible to the distance paradox compared to geographical proximity. For example, O'Grady & Lane (1996) emphasize that assuming "similarities" between the Canadian and the United States markets may inadvertently lead executives to disregard subtle but critical market differences, ultimately resulting in poor performance. In addition, certain market characteristics could also affect the market selection, such as size, prosperity, infrastructure and accessibility of target markets (de Mooij & Hofstede, 2002; Mitra & Golder, 2002), competition and labour costs (Sternquist, 1997) and local laws and regulations (Wang et al., 2021).

Moreover, the mode of entry into the international market is also a critical strategic decision. Foreign direct investment models, such as greenfield investment, mergers and acquisitions, and joint venture strategies, which have been central research topics in international business (Buckley & Casson, 2021), allow multinational corporations to penetrate host country markets. Each mode has its merits and drawbacks, contingent on the retailer's resources, experience, and risk tolerance. Notably, greenfield investment and mergers and acquisitions (M&A) are the most prevalent corporate strategies, and international retailers often concurrently adopt these two growth strategies to navigate the volatile international market. Greenfield investing, also known as organic growth, refers to growth attained through internal resources and activities, such as developing new products, expanding the sales force, or opening new stores. In retail geography, organic growth is further categorized into hierarchical diffusion and contagious diffusion (Birkin et al., 2002). Hierarchical diffusion involves expanding a store network from a higher population density market to a lower population concentration market—a top-down growth approach. In contrast, contagious diffusion entails expanding a retail store network from one location to adjacent locations, emphasizing the local market over the national market (Wang et al., 2021). According to Penrose (1959), organic growth depends on capable managers who can develop and mobilize the necessary resources to support such growth.

On the other hand, M&A, or inorganic growth, involves a company expanding by incorporating external entities into its existing organization. A key advantage of acquisition-based growth is the relatively rapid acquisition of new capacity or quality products (Coad, 2009; Penrose, 1959). Specifically, a merger occurs when two companies agree to combine their ownership into a new company, involving the relinquishment of stock and the issuance of shares in the new company. An acquisition occurs when an acquiring firm purchases over 50% of the equity or assets of the target firm, resulting in a change in control of the acquired firm (Birkin et al., 2002). Successful mergers or acquisitions necessitate the implementation of appropriate domestic and international strategies, as well as geographic tactics, rendering M&A a pivotal strategy in today's competitive business landscape and a preferred dynamic strategic option for firms (Datta et al., 2020).

In the highly competitive landscape of the international retail industry, retailers must also formulate effective competitive strategies to survive in foreign markets. From a competitive strategy standpoint, firms need to secure a competitive edge by identifying external opportunities in new and extant markets and then aligning the firm with these opportunities (Porter, 1980, 1985). This concept can be broken down into three strategic categories: Cost leadership, Differentiation, and Focus strategies. Firms that pursue any of these strategic paths may gain a competitive edge, whereas those that fail to clearly establish their strategic positioning will be "stuck in the middle" and forfeit their competitive advantage (Porter, 1980).

The cost leadership strategy seeks to offer customers the same or highly similar products or services as competitors at a lower cost. To sustain a robust competitive position, organizations pursuing a cost leadership strategy must concentrate on operational efficiencies that enable them to maintain profit margins over a considerable duration (Acquaah & Yasai-Ardekani, 2008). Wal-Mart exemplifies this strategy, where its renowned ability to pare down costs has at one point attracted criticism from politicians, unions, and others.

Differentiation strategy, on the other hand, entails a company endeavouring to introduce a product or service that is distinct from its competitors, and it commands a higher willingness to pay compared to the additional cost of differentiation. Companies pursuing a differentiation strategy strive to distinguish their products or services from competitors in terms of image and reputation in customers' minds, reliability, design features, and quality (Evans, 2005; Sashi & Stern, 1995). A notable example is Apple, which at one point became synonymous with mobile phones due to its exceptional design aesthetics and smooth operating system.

Lastly, focus strategy involves a company targeting one or more customer segments distinguished by specific characteristics or values. Firms pursuing a focus strategy must select the features based on the exploitation of their valuable, scarce, unique, and irreplaceable resources and competencies (Barney, 1991). A company employs a focused strategy when it desires a competitive advantage by focusing on a specific customer segment as opposed to the entire customer base.

Over time, international retailers may encounter challenges such as intensified competition, market saturation, or shifting consumer preferences, which may result in diminished sales and profitability, and subsequently, a loss of competitive advantage. In this scenario, the retailer is confronted with three options: continue operating the business, utilize the internal market to reallocate resources, or leverage the external market to divest (LIEBERMAN et al., 2017). Among these, redeployment typically entails reallocating corporate resources (such as assets, employees, and capital) from an existing market or business line to another part of the company or a completely different market. For example, after World War I, DuPont had to retract some manpower, material, and financial resources from the explosives business and redeploy them into other businesses (Penrose, 1960).

Divestiture, also known as divestment, is the process of removing one or more businesses, subsidiaries, or divisions of a company through sale, spin-off, or other means of narrowing the company's focus (Feldman, 2021). Divestment is usually a "last resort" for companies due to its high cost and lengthy duration, and sometimes companies are even willing to infuse more capital into the business to attempt a turnaround (LIEBERMAN et al., 2017; Nees, 1978). However, exiting a market does not always equate to failure. Many reasons for exiting the international market are not related to poor profitability but rather to strategic adjustments by the parent company, or the parent company being forced to choose between investment restructuring and ceasing operations (Alexander & Quinn, 2002; Ghertman, 1988; Hennart et al., 2002; Tsetsekos & Gombola, 1992). Concurrently, exit can also be a proactive strategic move, such as redirecting resources to international markets with greater long-term potential through divestment (Alexander et al., 2005).

2.2 Omnichannel Retailing

With the proliferation of smart devices and social networks, e-commerce has rapidly emerged as a crucial component of the future of retail. This evolution has led to the development of omni-channel retailing, a strategy that allows customers to seamlessly switch between retail channels throughout any stage of the purchasing process, including information retrieval, purchase, shipping, customs clearance, and returns (Zentes et al., 2007). Unlike traditional retail models that operate purely offline or online, omni-channel retailing merges online channels - which offers lower search costs (Goldmanis et al., 2010), distribution costs (Li et al., 2015), and the elimination of consumer travel time and geographic boundaries (Betancourt et al., 2016) - with the benefits of offline channels, which influence sensory product choice decisions (Chintagunta et al., 2012; Ratchford et al., 2020). As a result, omni-channel retailing has become the standard approach, with traditional online and offline retailers increasingly encroaching on each other's territories. For instance, Amazon, the world's largest online retailer, enabled customers to pick up and return products at physical stores, while Walmart, the world's largest offline retailer, has placed a strong emphasis on online shopping, in-store pickup, and home delivery (Jindal et al., 2021).

While omni-channel retailing offers numerous benefits, such as accessing a broader customer base and boosting sales, it also poses several challenges. In certain offline retail sectors traditionally dominated by brick-and-mortar stores, such as the home improvement industry, the transformation to omni-channel retailing is still very slow. In 2021, the e-commerce sales of Canadian building materials and garden equipment and supplies dealers are 1,975 million, an increase of more than 560% compared with 2016, and it also exceeds the 485% increase of the overall retail industry (Statistics Canada, 2023d). But while growth was strong, it accounted for only 3.9% of the category's total sales. Robinson and Caradima (2023) also asked industry experts in home improvement retail to filter variables based on perceived impact on success, but variables related to online or omni-channel retailing were not included. Instead, retailers are more concerned with what affects operating costs, marketing and potential revenue. However, to establish online and offline customer touchpoints, as well as to manage fulfillment, delivery, customer service, and returns logistics, omni-channel retailers must make substantial investments in operational and logistics systems and infrastructure (Cao, 2014; Mahadevan & Joshi, 2022; Picot-Coupey et al., 2016). Taken together, the potential benefits of this transition are still a topic of ongoing discussion.

Chapter 3: Data and Methods

This chapter describes the data and methodology for this study. This chapter is divided into four sections that correspond to the four research objectives of the study: (1) chronological development; (2) market distribution and store share calculation; (3) market demand estimation and assessment; and (4) trade area delimitation and spatial modelling. Data for this study are collected from various sources including Statistics Canada, the Centre for the Study for Commercial Activity (CSCA) at Toronto Metropolitan University, industry reports, and news reports. The data types used in the geographic analysis part are the Canadian Census, Canadian Income Survey, Survey of Household Spending, boundary, and store list (see Table 1).

Table 1. Data Sources

Data Name	Source	Year	Type
Canadian Census	Statistics Canada	2016/2021	CSV
Survey of Household Spending	Statistics Canada	2016	CSV
Canadian Income Survey	Statistics Canada	2016	CSV
Boundary	Statistics Canada	2016/2021	SHP
Store List	CSCA	2016/2021	CSV
Corporate Press	Corporate Website	/	TEXT
News Article	Mainstream Newspapers	/	TEXT

3.1 Chronological Development

To evaluate the development history of Lowe's, its operational strategy, and its financial health upon its entry into the Canadian market, press releases from the official corporate websites of Lowe's and its competitors, as well as articles from mainstream newspapers such as *Financial Post*, *Toronto Star*, and *CBC*, were reviewed. This extensive review helped reconstruct a timeline of major business events, casting light on developments such as store openings, expansion strategies, and overall performance.

3.2 Market Distribution and Store Share Calculation

Lowe's and competitor store listings are sourced from a database of major Canadian retailers to examine market distribution and store share across Canada. This database is compiled and maintained by the CSCA at the Toronto Metropolitan University, a member-supported, not-for-profit research center dedicated to analyzing location-based trends in consumer services and compiling a comprehensive location dataset (CSCA, 2023b). The dataset includes corporate information such as store name, address, geographic coordinates, NAICS[1] code, and estimated store size (see Appendix A).

Initially, the dataset is cleaned and processed using Python and Excel. For the purpose of the research, stores were selected based on two specific criteria: (1) Large-format stores. The Canadian home improvement market is primarily supplied by three major retail types: hardware stores, big-boxes, and pro dealers (Hernandez, 2003). Given the distinct product offerings, pricing strategies, and services of each store format, a comparison on equal grounds is crucial. Thus, stores selected were those of a size comparable to Lowe's large-format outlets, which are those with a floor area greater or equal to 75,000 ft^2 . (2) In the NAICS 444110 category. The home improvement industry Lowe's operates in mainly resides within NAICS 444 (Dealers of

[1] North American Industrial Classification

Building Materials and Garden Equipment and Supplies), and the NAICS 444110 classification is the "Home Centers" in this classification, which can further ensure only selected stores type similar to Lowe's. In addition, although NAICS 452 - Department Stores, for example, also sell tools and equipment sold at home improvement retailers, due to the challenges of obtaining the proportion of actual sales products, only stores in the NAICS 444 classification were selected. Subsequently, the store data was merged with the provincial boundary file to ascertain the count of stores for each brand in the provinces. Ultimately, the data was incorporated into a calculation formula to determine the market distribution and store share. Additionally, retail trade sales data from Statistics Canada was employed for comparison to better understand the market distribution of the Canadian home improvement market. The calculation formula can be expressed as follows:

*Market Distribution = (Sales in a province / Sales in 10 provinces) * 100*

*Store Share = (Number of stores of the brand in the province / Total number of stores of all brands in 10 provinces) * 100*

3.3 Market Demand Estimation and Assessment

Market demand, alternatively referred to as market size or retail demand, can be estimated using consumer expenditure and demographic data (Strother et al., 2009). The customer spending data, which represents the average home improvement expenditure per household, was computed from a selection of related products listed in the Survey of Household

Spending. As defined by the NAICS 444, this includes businesses primarily involved in retailing professional or general line building and home improvement materials, lawn and garden equipment and supplies, outdoor power equipment, and nursery and garden products (Statistics Canada, 2023e). In conjunction with the categories of goods sold in the NAICS 444 stores, the following products are selected (see Table 2). Although there is no distinct indication of building materials in these products, a systematic search revealed that there are no other classifications that are more closely related to the selected products, so it is assumed that building materials have been included in these categories.

The demographic data used to calculate market demand came from the Canadian Census, the Canadian Income Survey, and the Survey of Household Spending. The basic formula for estimating consumer expenditure consists of the proportion of average household income spent on products, the average household after-taxes income, and the total number of households. Although it is simple to calculate market demand by combining these three factors, there exist certain disparities in home improvement expenditures across household types with different levels of income. In order to improve the precision of estimates, quintile methods by household income are used in this study.

The number of decile households and the after-tax income of each province, as reported by the Canadian Income Survey, can be used to calculate the quintile family income. The total expenditure on selected products is then divided by the average after-tax income of quintile households. This yields the proportion of each province's household average after-tax income

Table 2. Household Expenditures Categories Related to Home Improvement

Household Expenditures Categories
Household furnishings and equipment
Household furnishings
Furniture
Rugs, mats and underpadding
Works of art, carvings and other decorative ware
Art, antiques and decorative ware
Linens
Other household furnishings (curtains, mirrors and picture frames)
Household equipment
Household appliances
Refrigerators and freezers
Microwave ovens and cooking appliances
Microwave ovens
Cooking appliances
Washers, dryers and dishwashers
Washers and dryers
Dishwashers
Room air conditioners, portable humidifiers and dehumidifiers
Other electric equipment and appliances (including parts and attachments)
Other household equipment
Home and workshop tools and equipment
Lawn, garden and snow-removal equipment and tools
Non-electric kitchen and cooking equipment
Other household equipment, parts and accessories
Maintenance, rental, repairs and services related to household furnishings and equipment
Services related to household furnishings and equipment
Rental of heating equipment
Home security services

Note. Adapted from Statistics Canada (2021).

spent on home improvement products. Then, each Dissemination Area (DA) is categorized by the upper limit of post-tax income quintiles (monetary reconciliation via the Bank of Canada's inflation calculator), and multiplied by the corresponding percentage derived from the basic formula. Ultimately, retail trade sales data from Statistics Canada is employed to cross-verify the market demand estimates by comparing the results of the quintile calculation method to evaluate the precision of the home improvement market demand.

Taking a DA in Ontario (35204246) as an example, the average after-tax income of this DA is in the lowest category in Ontario. It has been calculated that, in 2016, the proportion of Ontario's average household income spent on home improvement products in the lowest quintile was 3.9% (see Appendix A). Then multiply by the average after-tax income in that DA and the number of households. The calculation formula of the market demand for DA (35204246) can be expressed as follows:

*Market demand for DA:35204246 = The proportion of average household income in the lowest quintile spent on home improvement products (0.039) * Average after-tax household income ($21,259) * Number of households (1,275) = $1,070,107*

It should be noted, however, that in Canada, the Survey of Household Spending and Retail Trade Sales data are only released at the provincial level. Therefore, for the case study of the Toronto CMA, there may still be some accuracy issues. In addition, since the questionnaire survey counts the income and expenses of the previous year, the sales report data of the previous year will also be used in the comparison.

3.4 Trade Area Delimitation and Spatial Modelling

The delineation of retail trade areas is a fundamental task of retail analysis and has long been used by analysts and practitioners for retail site evaluation and other market research (Cui et al., 2012; O'KELLY & MILLER, 1989). There are two main approaches to delimited trade areas: descriptive and prescriptive. The descriptive approach is defined based on customer data, and trade areas are back-simulated through consumer information. This type of method is also known as Dispersed market, assuming that the address of the store customer is known, and that there is a particular pattern in the distribution of customers, that is, through the same age, income, race and other geodemographic data to find potential customer groups. The prescriptive approach is based on mathematical and statistical models. Such approaches include *spatial monopoly* (deterministic), which clearly delimits the space of the trade area, and the customers who visit the store are all and only from the area (Hernandez et al., 2004), and *market penetration* (probabilistic), which assumes that the space of trade areas has no clear boundaries, and trade areas can overlap each other, and there is a probability that a consumer will choose a particular retail location over another (Huff, 1964).

In this study, since customer data and store sales data are unavailable, a prescriptive approach is used to define the trade areas of Lowe's and its competitors. Compared with the spatial monopoly approach, the market penetration approach can more accurately reflect the distribution of trade area levels, and it can also better reflect the intensity of competition between different stores. The disadvantage is that such models usually require more complex calculations and modelling time. For this reason, the Huff model is chosen as the spatial model for this study.

The Huff model, also known as the Huff gravity model, is a widely recognized spatial interaction model. Inspired by Reilly's Law of Retail Gravitation (Reilly, 1931), the model expands upon Reilly's Law by incorporating the attractiveness of competing stores into the equation, thus predicting the probability of a consumer choosing a specific retail location over another (Huff, 1964). It proposes that there are two main factors that affect the number of leads in a store. The first is the availability of goods, also known as the attractiveness of the store (representing the availability of the product, which can also be replaced by the store size, the number of parking spaces, etc.), and the second is the travel time or travel distance to the store. A larger store with more merchandise offerings is believed to be more attractive to customers, even from distant locations. However, as the cost of travelling to the store increases, the willingness to visit the store may decrease significantly (Huff, 1963). Based on these two factors, the probability that a customer visits the store can be expressed as:

$$P_{\text{ij}} = \frac{\frac{S_j}{D_{ij}^{\lambda}}}{\sum_j^n \left(\frac{S_j}{D_{ij}^{\lambda}} \right)}$$

where P_{ij} is the probability of customer i visiting store j; S_j is the attractiveness of store j (store size is used in this study); D_{ij} is the physical distance between customer i and store j; and n indicates there are n stores that customer i can visit. The parameters λ used to reflect the effects of attractiveness and distance on the model.

In the part of calculating the attractiveness index, this study standardized the estimated store size with the Max Score method, and used "2" as the parameter λ for the model (because home improvement items are neither high-frequency nor low-frequency purchased goods). After identifying the trade areas for each store, the primary (greater than 60% probability), secondary (greater than 20% but less than or equal to 60% probability), and tertiary trade (greater than 0 and less than or equal to 20% probability) areas are delineated for each store. The market conditions of each trade area are then summarized using the market demand calculated above to obtain sales potential. The sales potential formula for a store can be expressed as:

*Sales potential of store A = Sum (Probability of customers in a DA going to store A * Market demand of that DA)*

To examine the market conditions of Lowe's stores and its competitors, this study also selects a set of census variables to analyze market conditions within the trade areas. Based on Robinson and Balulescu (2018) study (hot spot analysis) of a large Ontario home improvement chain, five variables are selected (see Table 3). These variables help to identify areas of high or low home improvement spending, where "Total number of private households by tenure: owner", "Average monthly shelter costs for owned dwellings ($)", "Average value of dwelling ($)" and "Total number of households with income over $100,000" are the variables positively correlated with spending on home improvement. When the status of the house is owned rather than rented, people are more likely to renovate the house. The higher the value of the house, the higher the quantity and quality of the decoration materials that it needs. The higher the household income, the higher the chance of them spending more on home improvement. "Total number of owner and tenant households with spending less than 30% of household total income on shelter costs" and is the variable that is negatively correlated with spending on home improvement. The more households spend less than 30% on their shelter, the less demand for home improvement materials.

Table 3. Census Variables for Trade Area Analysis

Variable Name	Description
TH_Owner	Number of private households by tenure: owner
HI_O_100	Number of households with income over $100,000
H_SL_30	Number of owner and tenant households with spending less than 30% of household total income on shelter costs
AMC	Average monthly shelter costs for owned dwellings ($)
AVD	Average value of dwelling ($)

Note. Adapted from Statistics Canada (2023).

It should be noted that due to Statistics Canada not releasing the Survey of Household Spending data for 2021, and the pandemic's significant impact on income leading to forecasting deviations, accurately determining the Canadian home improvement market demand for 2021 via calculations becomes challenging. Given this limitation, this study opted to forgo comparisons between the trade areas of stores in 2016 and 2021. The emphasis, instead, is placed on tracking store changes and assessing the sales potential of specific stores.

Chapter 4: Growth and Expansion of Lowe's

This chapter provides an overview of the major events in the history of Lowe's, and analyzes Lowe's operating strategies and financial status in Canada. A comprehensive analysis of the company's history may cast light on Lowe's difficulties and subsequent sales.

4.1 Lowe’s Internationalization Effort

The first Lowe's retail store opened in North Wilkesboro, North Carolina in 1921 as a small hardware store designed to meet the needs of local builders and homeowners (see Table 4). In addition to hardware and building supplies, the store also sold sewing supplies, dry goods, saddlery, and other miscellaneous items. The company restructured its operations in 1946 to concentrate on hardware and construction supplies. After that, Lowe's rapidly grew from a single store into a chain, covering all of North Carolina and the neighbouring states, and went public in 1961 as Lowe's Companies Inc. In 1964, it reached one million customers for the first time, and in 1982, its sales exceeded the $1 billion mark.

With the beginning of the big box era, in 1989, Lowe's started the transition to large warehouse stores, and implemented a brand remodelling strategy in 1994, from the traditional small-town country store model to large urban big-boxes (with an area of more than 85,000 square ft. warehouse). It began to compete with The Home Depot and differentiate itself from Home Depot through a differentiation strategy, providing high-quality services, cleaner aisles, and a wider range of products to expand marketing to consumers. In the following year, it also

Table 4. Lowe's Major Events

Year	Event
1921	Founder Lucius Smith Lowe opened a small hardware store in North Wilkesboro, North Carolina, USA, named North Wilkesboro Hardware.
1946	The company adjusted its business and refocused on home improvement products.
1952	Renamed to Lowe's North Wilkesboro Hardware.
1958	The total number of employees reaches 344, and the target customers are professionals such as builders and construction merchants.
1961	The company changed its name to Lowe's Companies Inc. and went public.
1989	Accelerate transformation to big box stores.
1994	Rebranding, while targeting non-professional contractors, and starting to compete with Home Depot in big cities.
1995	Launched Lowes.com, entering the digital market.
1997	Opening the first store in the urban market.
1998	Acquired Eagle Hardware & Garden, Inc for approximately US$1.34 billion through a stock exchange to accelerate western expansion.
2007	Started international expansion and opened the first overseas store in Hamilton, Canada.
2010	Entered Mexico and opened the first store in Monterrey.
2011	Entering Australia in the form of a joint venture, Masters Home Improvement opened its first store in Victoria.
2013	Acquired bankrupt Orchard Supply Hardware for US$205 million.
2015	Established office in Bangalore, India; acquired 13 stores and 1 distribution center from former Target Canada for Can$151 million.
2016	Sold all the equity of the Australian joint venture company and exited the Australian market; acquired the Canadian local company RONA for CA3.2 billion.
2017	Acquired Maintenance Supply Headquarters for US$512 million.
2018	All Orchard Supply Hardware stores are closed nationwide and liquidation begins.
2019	Closed all stores in Mexico and exited the Mexican market; acquired Boomerang Commerce's Retail Analytics Platform and changed its name to CommerceIQ.
2022	Sold the Canadian business for US$400 million and exited the Canadian market.

Note. Adapted from Lowe's Companies Inc. (2023) and Zippia Inc. (2023).

launched the online platform Lows.com to enter the e-commerce market. In 2002, it rose up to the Fortune 100 for the first time with a revenue of US$22 billion.

Lowe's began its international expansion in 2007 by opening stores in Canada, Mexico

(2010), Australia (2011), and an office in India (2015). In 2016, Lowe’s expanded further in Canada by acquiring RONA, a domestic home improvement company with more than 500 stores at that time. As Lowe was internationalizing, its operation in the United States was also undergoing drastic expansion, where it acquired Orchard Supply Hardware in 2013, the Maintenance Supply Headquarters in 2017, and the retail analytics platform of Boomerang Commerce in 2019.

Despite the market opportunities in both the home country and abroad, Lowe’s expansion has not been smooth. Due to heavy losses in 2016, Lowe's sold its joint venture business in Australia, closed all Orchard Supply Hardware stores in the U.S. in 2018, withdrew from the Mexican market permanently in 2019, and sold its Canadian business in 2022. With Lowe's withdrawing from all the overseas markets, it currently only retains its office in India (providing technical support only). Although Lowe's is still the 12th largest retailer in the world and the second largest home improvement retailer in the world,[2] its internationalization endeavour has been considered a failure.

4.2 Lowe's in Canada

Canada became Lowe's first international market in 2007 due to its geographical and cultural proximity, as well as the distinctions between the United States and Canada in the development stage of home improvement. After entering the Canadian market, Lowe's adopted

[2] with sales of $89.6 billion in 2022 (Deloitte, 2022), 12% market share (Garcia, 2021).

the organic growth strategy with contagious diffusion, similar to that used in the United States in order to establish its own store network; that is, it first opened stores in the major cities and then spread around. In the Province of Ontario, the first three stores opened in 2007 in Hamilton, Brampton, and Brantford. Four additional stores were established in Toronto, East Gwillimbury, Vaughan, and Brampton in the following year. The typical cost of developing one store was $20.5 million (CBC News, 2006). Lowe's also purchased a $151 million lease from the former Target Canada in 2015, including 13 stores and a distribution centre in Milton (Carville, 2015).

In 2012, Lowe's tried to acquire RONA as a different means of expansion, a Canadian company headquartered in Quebec, for approximately US$1.8 billion, but it was forced to cancel due to strong opposition from the RONA shareholders. RONA's sales in that year were Can$4.8 billion, and its market share in the Canadian home improvement industry was 13.6%, ranking first with Home Depot (RONA Inc., 2012; Statista Research Department, 2016). However, Lowe's was persistent. Five months later, Lowe's hired former Walmart Canada and Loblaw Companies executive Sylvain Prud'homme as the new president of its Canadian division (Lowe's Companies Inc., 2013). Prud'homme is a French-speaking senior executive with extensive retail and political experience in Canada, especially Quebec. When he was vice president of operations at Walmart, he defended the company's credibility in Quebec; he may also be familiar with Loblaw's acquisition of Quebec grocer Provigo in the late 1990s (Praet, 2013). Thanks to his efforts, in 2016, RONA finally agreed to the acquisition (US$2.4 billion acquisition offer). The acquisition brought about significant changes to the Canadian home improvement market and provided an opportunity for both companies to strengthen their presence in the Canadian home improvement market to compete with The Home Depot.

After the acquisition, Lowe’s adopted a dual-brand strategy similar to Best Buy's in Canada (Valencia Saravia & Wang, 2016), as opposed to the single-brand strategy of Wal-Mart, Home Depot, Target, and other American companies (which unified their names into their own banners after acquiring Canadian companies). Lowe's retained most of the RONA store banners (see Figure 3) and committed to continuing to hire the vast majority of its current staff and leadership team (Evans, 2016). Lowe’s maintained a strict brand division of its stores into four store types: Lowe's big-boxes, large Reno-Depot stores primarily in Quebec, mid-sized RONA stores and small Ace Hardware stores. Lowe's also intended to roll out a new prototype of the RONA store, including four new stores and nine overhauled stores, as well as to double the number of Ace stores over the next five years (Marowits, 2016). As well, Lowe’s added appliances to 47 RONA stores (including 30 outside Quebec) and 21 Reno-Depots, enhanced its online offering, and offered pickup and delivery service across its retail network.

However, the expanded Lowe's could not achieve the expected benefits. In 2018, Lowe's Canada announced that it would close 27 underperforming stores (24 RONA stores, 2 Lowe's stores and 1 Reno-Depot) across the country, accounting for 3% of the total retail space, plus a support center, a truss factory and a block factory (RONA Inc., 2018). In 2019, it announced again to close 34 additional underperforming stores in 6 provinces to optimize its network, including 26 RONA stores, 6 Lowe's stores and 2 Reno-Depot (RONA Inc., 2019). Just six years

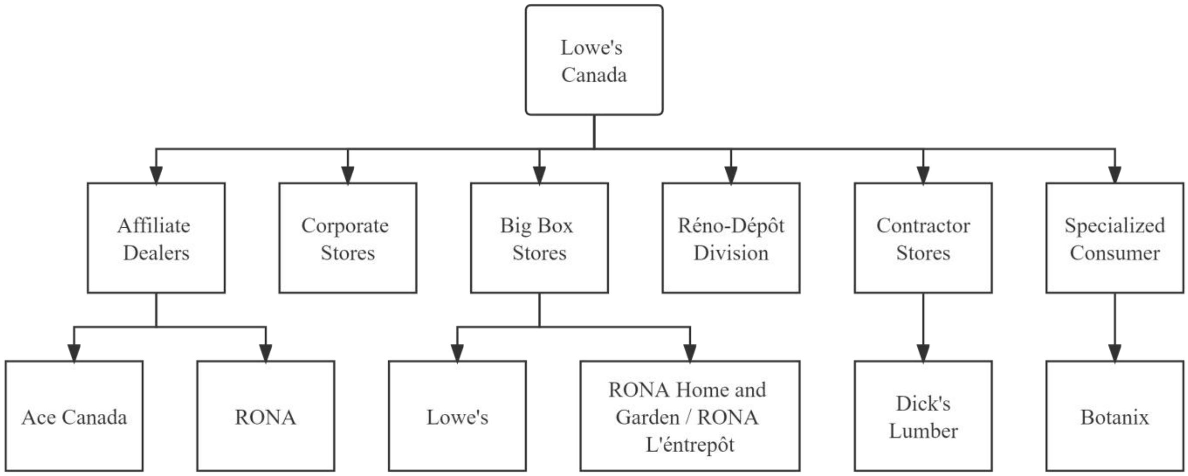


Figure 3. Lowe's Banners in Canada After Acquiring RONA (2016)

Note. Adapted from Hardlines Inc. (2016) and Lowe's Companies Inc. (2023).

after the acquisition, in 2022, Lowe's announced a definitive agreement to sell its entire Canadian retail business to Sycamore Partners, a private equity firm specializing in retail, consumer products and distribution-related investments, for $400 million in cash and deferred performance-based consideration (RONA Inc., 2022). "The sale of the Canadian retail business is an important step in simplifying Lowe's business model," said Marvin R. Ellison, Lowe's Chairman, President and Chief Executive Officer. While this business represents approximately 7% of Lowe's full-year sales outlook in 2022, it also diluted operating margin outlook by approximately 60 basis points." Following the sale, the remaining Lowe's stores in Canada will eventually all be renamed RONA.

Chapter 5: Geographic Analysis

This chapter analyzes Lowe's and its competitors' national market distribution and store share, evaluates the estimated results of the Canadian home improvement market, and compares them with the actual trade sales data to answer whether the Canadian home improvement market is large enough for Lowe's, RONA, and The Home Depot operate at the same time. Trade area analysis is then implemented to comprehend Lowe's operations in Canada. By comparing the trade areas of the three brands, it answers the question of whether the locations of Lowe's stores were inferior in comparison to those of its competitors and, as a result, contributed to its failure in Canada. Finally, the changes in store status between 2016 and 2021 are compared, and the underlying reasons for these changes are analyzed based on the findings of the trade area analysis.

5.1 The National Home Improvement Market

After rigorous data cleaning, 325 large-format stores in Canada were identified under the NAICS 444110 category and with a floor area exceeding 75,000 square feet in 2016. These stores were affiliated with three conglomerates: "The Home Depot Inc." (181 stores), "Lowe's Companies Inc." (119 stores), and "J.D. Irving Ltd." (25 stores). By 2021, the landscape had shifted: "The Home Depot Inc." retained its 181 stores, "Lowe's Companies Inc." expanded to 122 stores, while "J.D. Irving Ltd." dwindled to just 10 stores. It is obvious that "J.D. Irving Ltd." operates at a much smaller scale than the other two (see Figure 4).

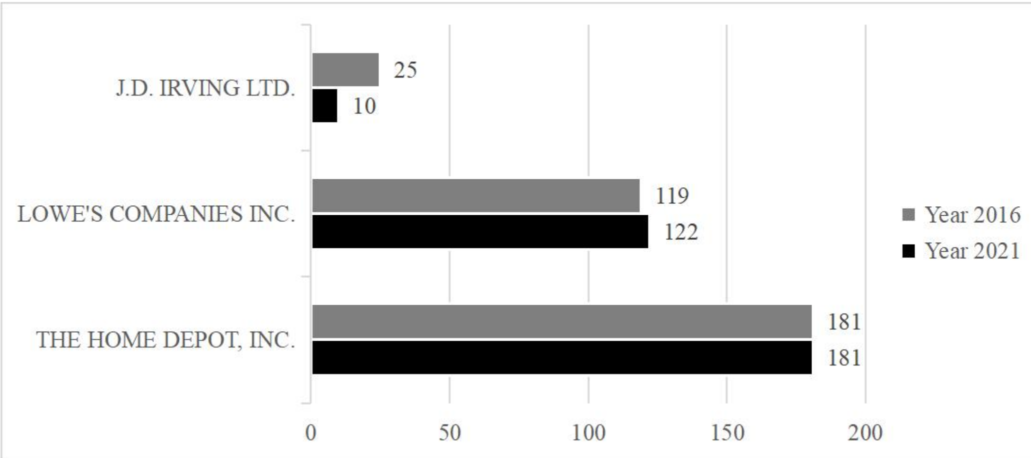


Figure 4. Number of Canadian Large-format HI Stores in NAICS 444110 Category

Note. HI is an abbreviation for Home Improvement.

Based on the 2016 NAICS 444 retail trade sales data, the home improvement market in Canada is concentrated in ten provinces, with Ontario, Quebec, British Columbia, and Alberta representing the four largest provinces in which main retail players compete for market shares, accounting for 84.7% of total sales (see Table 5). Ontario holds the largest market share among all provinces with 35.6%, followed by Quebec with 22.8%, British Columbia with 13.4%, and Alberta with 13.0%. In terms of market distribution, Ontario also had the most home improvement stores in 2016 (with 140), accounting for 43.1% of the total stores in the 10 provinces. It is trailed by Quebec with 19.1% (62 stores), Alberta with 12.3% (40 stores), and British Columbia with 8.2% (30 stores), rankings that align with the market share of actual sales. By 2021, the distribution of stores across 10 provinces in Canada slightly shifted. Ontario's share of stores rose to 43.8%, Quebec's to 19.5%, Alberta's to 13.7%, and British Columbia's to 10.5%.

Table 5. HI Market Distribution and Store Share in Ten Provinces

Name	Market Distribution					Store Share					
	Retail Trade Sales	Total HI Store				The Home Depot		Lowe's		J. D. Irving	
	2016 (28.7 B$)	2016		2021		2016	2021	2016	2021	2016	2021
		#	%	#	%						
Newfoundland and Labrador	1.7%	7	2.2%	3	1.0%	0.3%	0.3%	0.3%	0.0%	1.5%	0.6%
Prince Edward Island	0.7%	3	0.9%	2	0.6%	0.3%	0.3%	0.0%	0.0%	0.6%	0.3%
Nova Scotia	3.0%	10	3.1%	6	1.9%	1.2%	1.3%	0.0%	0.6%	1.8%	0.0%
New Brunswick	2.1%	15	4.6%	10	3.2%	0.9%	1.0%	0.0%	0.0%	3.7%	2.2%
Quebec	22.8%	62	19.1%	61	19.5%	6.8%	7.0%	12.3%	12.5%	0.0%	0.0%
Ontario	35.6%	140	43.1%	137	43.8%	27.1%	28.1%	16.0%	15.7%	0.0%	0.0%
Manitoba	3.9%	9	2.8%	10	3.2%	1.8%	1.9%	0.9%	1.3%	0.0%	0.0%
Saskatchewan	3.8%	9	2.8%	8	2.6%	1.2%	1.3%	1.5%	1.3%	0.0%	0.0%
Alberta	13.0%	40	12.3%	43	13.7%	8.3%	8.6%	4.0%	5.1%	0.0%	0.0%
British Columbia	13.4%	30	9.2%	33	10.5%	7.7%	8.0%	1.5%	2.6%	0.0%	0.0%
Total	100.0%	325	100.0%	313	100.0%	55.7%	57.8%	36.6%	39.0%	7.7%	3.2%

Note. Adapted from CSCA (2023a) and Statistics Canada (2023b).

In 2016, the store shares of Home Depot, Lowe's, and J.D. Irving across 10 Canadian provinces stood at 55.7%, 36.6%, and 7.7% respectively. By 2021, these figures shifted to 57.8%, 39.0%, and 3.2%. In Ontario, Lowe's held 16.0% of stores in 2016, compared to The Home Depot's 27.1%. By 2021, Lowe's share marginally dipped to 15.7%, while Home Depot increased to 28.1%. In Quebec during 2016, Lowe's and The Home Depot held 12.3% and 6.8% of the store share, respectively. These numbers adjusted slightly in 2021 to 12.5% and 7.0% (Lowe's closed one store in Quebec, but due to overall store count changes, its store share still rose). In Alberta and British Columbia, Lowe's shares went up from 4.0% and 1.5% in 2016 to 5.1% and 2.6% in 2021. Meanwhile, Home Depot's shares in these provinces rose from 8.3% and 7.7% to 8.6% and 8.0%. Significantly, J.D. Irving lacks a presence in the four major markets where Lowe's and The Home Depot dominate. Instead, it's predominantly situated in the four eastern Canadian provinces, where Lowe's has a minimal footprint (see Table 5).

In terms of home improvement market demand, estimates show that the total expenditure on home improvement in Canada in 2015 amounted to 28.7 billion Canadian dollars. Compared to the Retail Sales report from Statistics Canada ($30.2 billion), the total difference of 4.8% (see Table 6). The most significant percentage of differences are observed in Prince Edward Island (64.7%), New Brunswick (31.8%), and Nova Scotia (27.8%). However, due to the relatively minor market share of these provinces, the discrepancy does not significantly affect the overall estimation. Conversely, Quebec and Ontario exhibit the largest differences, being undervalued by $1,042 million and overvalued by $828 million, respectively. Regarding the overall market distribution, the difference between the estimated and actual market distribution for Ontario is 4.8%, indicating that the predicted market demand still exhibits higher accuracy. Among these, the home improvement market demand in the Toronto CMA is 5.3 billion Canadian dollars, accounting for 44.8% of the market demand in Ontario, which indicates that the Toronto CMA indeed serves as a representative case study area.

Table 6. Differences in Market Demand Among Ten Provinces (2015)

Name	Actual		Estimation		Difference	
	$	%	$	%	$	%
Newfoundland and Labrador	553	1.8%	457	1.6%	-96	-17.3%
Prince Edward Island	202	0.7%	71	0.2%	-130	-64.7%
Nova Scotia	878	2.9%	634	2.2%	-244	-27.8%
New Brunswick	641	2.1%	437	1.5%	-204	-31.8%
Quebec	6,228	20.7%	5,186	18.1%	-1,042	-16.7%
Ontario	10,959	36.3%	11,787	41.1%	828	7.6%
Manitoba	1,269	4.2%	1,074	3.7%	-195	-15.3%
Saskatchewan	1,226	4.1%	998	3.5%	-227	-18.6%
Alberta	4,284	14.2%	4,252	14.8%	-32	-0.7%
British Columbia	3,919	13.0%	3,816	13.3%	-104	-2.6%
Total	30,159	100.0%	28,712	100.0%	-1,447	-4.8%

Note. Adapted from Statistics Canada (2023b), The unit is in millions of dollars.

Subsequently, this study projected the estimated market demand and store distribution onto a Canadian map (see Figure 5). The visualization revealed that the majority of stores and high-demand areas are proximal to major CMAs. Both Ontario and Quebec feature the highest concentration of stores, indicating that not only are these provinces the most substantial markets, but the competition within them is also particularly intense and centralized. In the Toronto CMA, the densest market demand is observed in the central and southwest regions.

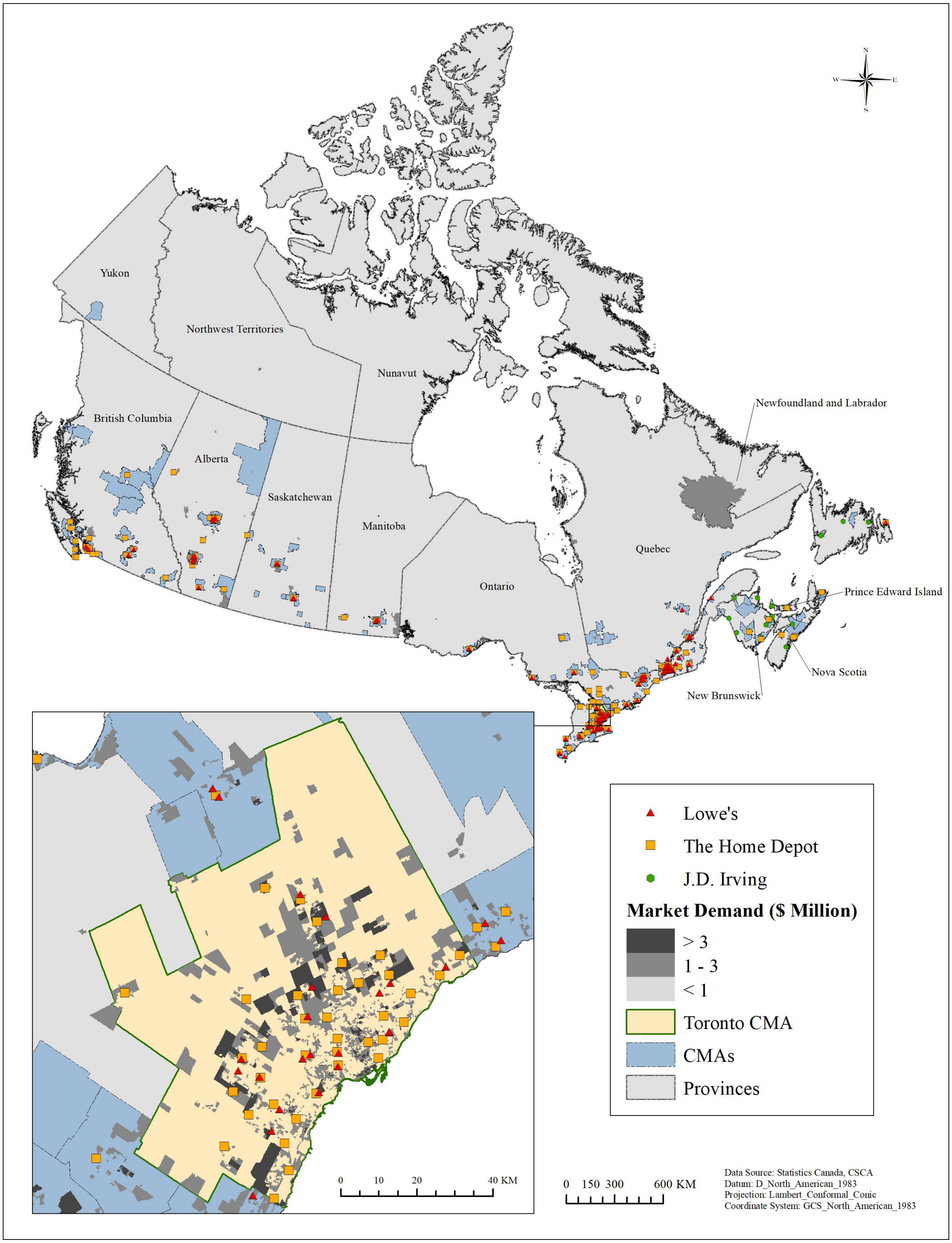


Figure 5. Store Share and Estimated Home Improvement Market Demand in Canada (2016)

In conclusion, Canada's home improvement market is primarily dominated by three conglomerates: "The Home Depot Inc.", "Lowe's Companies Inc.", and "J.D. Irving Ltd.". The unique geographic concentration of J.D. Irving highlights its divergent market strategy compared to Lowe's. Only The Home Depot, due to its similar scale and target market, stands as a direct and main competitor to Lowe's. In terms of market distribution and store share, the major markets (Ontario, Quebec, Alberta, and British Columbia) have intensified competition, and Ontario is both the largest and most fiercely contested market in this subsector. While Lowe's shows a slight reduction in store share in Ontario between 2016 and 2021, the province remains its primary market. Moreover, Lowe's recent expansions into Alberta and British Columbia have enabled it to capture a portion of The Home Depot's market, bolstering its overall store share. In addition, despite some variances between the estimated home improvement market demand and the actual retail trade sales data, the discrepancies remain within an acceptable threshold.

5.2 Toronto CMA Case Study

In the case study focused on Toronto CMA, to better understand the differences between the stores Lowe's developed through organic growth and those stores gained through the acquisition of RONA. This study further categorizes Lowe's brands into two groups: Lowe's and RONA. The RONA category encompasses stores under various banners, including RONA, RONA Warehouse/L'entrepot, Reno Depot, and RONA Home & Garden.

The results of the Huff model show that in 2016, Lowe's, RONA and The Home Depot had 12, 7 and 37 stores respectively in the Toronto CMA, and the total sales potential were $1,264 million, $806 million, and $3,808 million, respectively (see Table 7). The primary trade areas of Lowe's and RONA captured sales potentials of merely $50 million and $49 million, representing only 4% and 6% of its overall sales potential. The sales potential in the secondary trade areas was slightly higher at $242 million (19%) and $183 million (23%). In contrast, the sales potential of The Home Depot's primary and secondary trade areas accounted for 10% ($395 million) and 23% ($869 million) of its total sales potential. The average sales potential of The Home Depot's primary trade area ($11 million) is also superior to that of Lowe's and RONA, being 2.8 times greater than Lowe's ($4 million) and 1.6 times greater than RONA ($7 million). Moreover, Lowe's stores exhibited the lowest average sales potential in the secondary trade area among the three brands at merely $20 million, with RONA being the highest at $26 million and The Home Depot ranking second at $23 million. Intriguingly, while Lowe's and RONA lag behind The Home Depot in the combined primary and secondary trade areas, The Home Depot's overall average store sales potential ($103 million) is inferior to that of Lowe's and RONA ($105 million and $115 million, respectively), which could be attributed to the coverage of the tertiary trade area.

In terms of demographic characteristics, Lowe's primary and secondary trade areas consistently had the lowest numbers in several categories: number of homeowners, number of households with incomes over $100,000, and number of homeowners spending less than 30% on shelter. This disparity is most pronounced in the primary trade area, where it is less than half of

Table 7. Sales Potential and Market Conditions for Lowe's, RONA, and The Home Depot Store in Toronto CMA (2016)

Variable Name	Lowe's			RONA			The Home Depot		
	Pri	Sec	Total	Pri	Sec	Total	Pri	Sec	Total
Total sales potential ($ Million)	50	242	1,264	49	183	807	395	869	3,809
Average sales potential ($ Million)	4	20	105	7	26	115	11	23	103
Average number of owner households	1,712	7,665	30,591	2,792	9,869	32,151	3,417	9,631	28,789
Average number of households with Income over $100,000	916	4,004	16,140	1,422	5,221	17,285	1,887	5,416	15,701
Average number of owner spending less than 30% of Income on shelter	1,492	7,209	29,855	2,259	9,725	32,423	3,152	9,411	28,323
Average monthly shelter costs ($)	1,610	1,611	1,630	1,755	1,679	1,639	1,719	1,728	1,664
Average value of dwelling ($ Thousands)	579	602	597	674	633	609	645	651	616

Note. Lowe's has two stores without a primary trade area, and RONA and Home Depot each have one; and these trade area data are not included in the calculation of the averages.

that of The Home Depot. Furthermore, in terms of average monthly shelter expenditure and values of dwelling, Lowe's also ranks at the bottom among primary and secondary trade areas. This indicates that the Lowe's stores established via organic growth draw significantly fewer potential customers compared to the RONA outlets acquired through acquisition and its main competitor, Home Depot. Moreover, Lowe's customers typically spend less on home improvement each month, and their property values are generally lower.

Figure 6 illustrates the coverage of the primary and secondary trade areas of the three brand stores—Lowe's, RONA, and The Home Depot—in the Toronto CMA. It is evident that the primary trade area size of Lowe's stores is generally smaller than those of RONA and The Home Depot. Overall, there are still some high-demand areas in the market that lie outside the primary and secondary trade areas of the three brands. This indicates that the distribution of Lowe's, RONA, and The Home Depot stores is insufficient to fully satisfy the existing home improvement demand in the Toronto CMA, or there is a need to relocate some stores to optimize the store network.

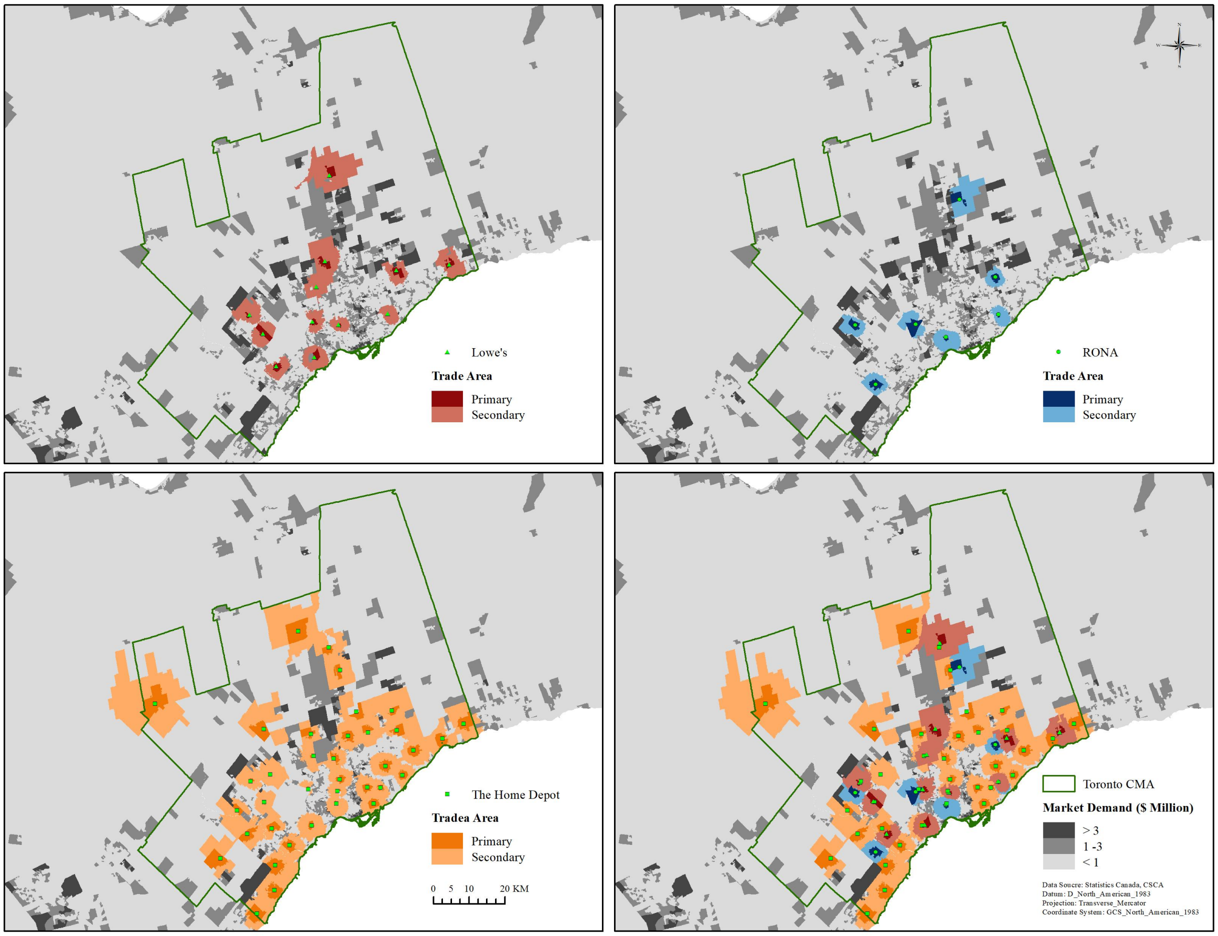


Figure 6. Trade Area Distribution for Lowe's, RONA, and The Home Depot Stores in Toronto CMA (2016)

This research then further refines the analysis to individual stores and evaluates Lowe's store status by examining the overall sales potential of specific stores and combining it with the changes in store status from 2016 to 2021 (see Table 8 and Appendix B). In 2019, Lowe's announced the closure of two stores in the Toronto CMA (RONA No. 38 Store and Lowe's No. 90 Store). According to the estimated sales potential, the closure of RONA No. 38 Store may be attributed to its overall sales potential, which had the lowest total sales potential among all

Lowe's and RONA stores. In contrast, although some stores, such as Lowe's No. 76 Store, No. 86 Store, and RONA No. 116 Store lacked a primary trade area due to poor location selection or high competition, and the sales potential of the secondary trade area was also very low ($5.1 million, $18.4 million, and $11.6 million, respectively), the overall sales potential for those stores was not the lowest. On the contrary, the overall sales potential of Lowe's No. 86 Store and RONA No. 116 Store both exceeded the company average and the industry average.

Table 8. Sales Potential Details for Lowe's and RONA Stores (2016)

Store ID	Chain Name	Status	Store Size	Sales Potential In Trade Area ($ Million)			
			(1,000 Square ft)	Primary	Secondary	Pri + Sec	Total
38	RONA	Closed	100.0	5.7	4.9	10.7	51.2
85	Lowe's	Unchanged*	141.7	0.8	19.9	20.7	64.0
74	Lowe's	Unchanged	128.0	7.2	17.2	24.4	70.7
76	Lowe's	Unchanged	130.0	/	5.1	5.1	85.3
80	Lowe's	Unchanged	142.3	2.1	14.7	16.8	87.4
50	RONA	Unchanged	94.0	7.0	20.4	27.4	87.8
48	RONA	Unchanged	120.0	8.1	25.6	33.7	90.7
81	Lowe's	Unchanged	140.3	1.1	27.2	28.3	95.5
87	Lowe's	Unchanged	154.0	4.0	17.0	21.0	105.7
79	Lowe's	Unchanged	140.0	12.3	24.1	36.5	108.1
47	RONA	Unchanged	120.0	22.7	24.9	47.6	109.6
116	RONA	Unchanged	160.0	/	11.6	11.6	110.6
89	Lowe's	Unchanged	130.0	2.9	23.9	26.8	113.2
86	Lowe's	Unchanged	128.2	/	18.4	18.4	115.6
90	Lowe's	Closed	140.3	3.1	18.3	21.4	116.7
49	RONA	Unchanged	130.0	0.5	20.6	21.0	118.1
78	Lowe's	Unchanged	140.3	14.4	28.3	42.8	121.4
88	Lowe's	Unchanged	140.3	1.8	28.1	29.9	180.6
51	RONA	Unchanged	175.0	5.2	75.5	80.6	238.7
Company Average			134.4	5.2	22.4	27.6	109.0
Industry Average (with The Home Depot)			124.8	8.8	23.1	31.9	105.0

Note. Unchanged means that the status of the store has not changed from 2016 to 2021, that is, it is still operating.

Another store that was closed, Lowe's No. 90 Store, did not seem to be because of a lack of estimated sales potential. In fact, it was at the middle-to-high level overall. A possible reason for closing this store could be to minimize competition between RONA and Lowe's in the region and reallocate resources. Figure 7 illustrates the area where Lowe's No. 90 Store is located. It is evident that all three brands have opened a store in this area, and their secondary trade areas overlap, indicating a highly competitive area. After closing Lowe's No. 90 Store, the RONA No. 116 Store in that area should acquire some customers who initially patronized Lowe's.

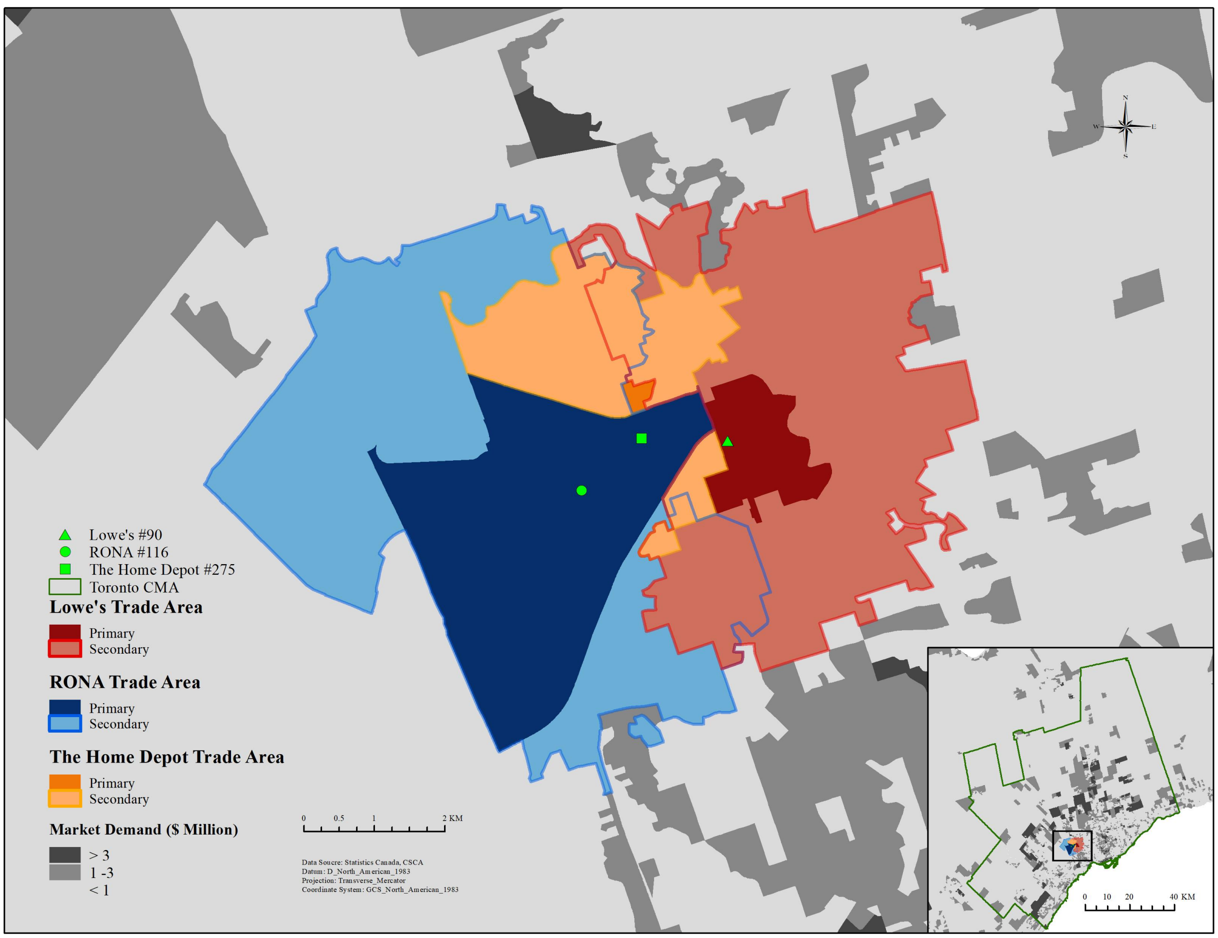


Figure 7. High Competition Area of Lowe's, RONA and The Home Depot

In conclusion, Lowe's, particularly the stores developed from organic growth, occupy less favourable locations compared to its primary competitors, potentially contributing to its failure in Canada. The sales potential of the typical Lowe's store's primary and secondary trade areas lags considerably behind that of Home Depot, and its market conditions aren't as strong. Further examination of individual stores indicates Lowe's efforts to enhance its store network and market share by shutting down underperforming or highly competitive stores. The visualization results suggest unexplored high-demand regions within the Toronto CMA, lying outside the primary and secondary trade areas of both Lowe's and Home Depot. This points to untapped growth opportunities or prospects for store optimization in Toronto CMA. Additionally, an examination of Home Depot's trade area data reveals that almost two-thirds of its stores in the Toronto CMA fall below the industry average (see Appendix A). This suggests that not only Lowe's and RONA face challenges requiring store optimization. In fact, Home Depot's circumstances might be even more pressing.

Chapter 6: Conclusions and Limitations

6.1 Discussion and Conclusions

To reiterate, the purpose of this study is to examine the causes of the failure of Lowe's in Canada, from a geographical standpoint. This study seeks to answer two primary research questions as raised in the Introduction: (1) Is the Canadian market sufficiently expansive to sustain the three leading home improvement retail chains—The Home Depot, Lowe's, and RONA? (2) Did Lowe's establish its stores in locations where the market conditions were inferior, or were there an excess of competitors in its trading area?

First of all, this study delves into the history of Lowe's by aggregating information from a multitude of sources and scrutinizing its operational strategies and financial outcomes. It was discerned that Lowe's experienced a period of prosperity post-2007, marked by extensive international expansion and significant upgrades to local investments. However, the serial withdrawal from international markets has led to deeming Lowe's internationalization efforts as unsuccessful. In Canada, after years of organic growth, Lowe's ascended to the position of the largest home improvement company through the acquisition of the Canadian home improvement giant, RONA. Unfortunately, due to persistent performance issues, Lowe's was compelled to sequentially shut down stores, ultimately culminating in its exit from the Canadian market.

Secondly, this study validates the market distribution and store share of the Canadian home improvement sector by analyzing the store distribution of Lowe's and its competitors in Canada, in conjunction with retail trade sales data. By doing so, this study contributes to the broader understanding of the Canadian home improvement industry. The findings indicate that the market distribution of Lowe's and its competitors in Canada is close to the actual sales. Ontario is the largest market, but growth is also strong in other provinces such as Alberta and British Columbia.

Thirdly, this study contributes to the existing literature on market demand estimation by proposing an optimized method to simulate the market demand for home improvement materials in Canada. This contribution is crucial, as most prior studies have assumed that the selected level comprised households with identical incomes when estimating market demand. The calculation method proposed in this study refined the accuracy of the estimation. A comparison reveals that the difference between the total value generated by this method and the actual sales is within a 5% margin, demonstrating its capacity to accurately simulate market demand.

Fourthly, a trade area analysis was conducted at Canada's largest CMA to compare the sales potential and market conditions of Lowe's stores with those of its competitors. The results indicate that Lowe's stores in Canada were indeed situated in unfavourable locations, where the primary and secondary trade areas of Lowe's did not capture a sufficient number of customers compared to its main competitor, The Home Depot. This scenario likely stems from the first-mover advantage (Pangarkar, 2018) of The Home Depot. With Lowe's entering the Canadian market at a later stage, prime locations were already secured by Home Depot. This is in contrast to Kerdasi (2016) study on Lowe's, which was modelled using a Thiessen polygon model (a *spatial monopoly* approach) and argued that Lowe's and Home Depot stores had healthy competition. In addition, this study confirms the findings of the trade area analysis regarding recent changes made by Lowe's operations in Canada. This contributes to the literature on international retail exits, which is significant because current research on resource reorganization by international retailers rarely adopts a geographical perspective.

This study has several practical implications: International retailers can leverage the findings to make more informed decisions regarding market entry in the Canadian home improvement industry. In contrast, incumbents could utilize the results to better comprehend which entry strategies should avoided in order to open or acquire a comparable store in a more cost-effective way. For instance, in markets with few competitors, avoid adding new store networks through mergers or acquisitions, as doing so may result in taking over stores that do not align with the company's growth objectives; or expanding through "under-considered" organic growth in highly competitive markets, as competitors are likely to have already occupied favourable positions. In addition, the optimized calculation equations proposed in the study will help retailers, planners and municipalities further improve the accuracy of forecasting consumer spending. Additionally, this study offers business managers guidance on site selection, such as through spatial modelling. In a highly competitive environment, an optimized store network can maximize the use of existing resources. These "extra" resources, such as attracting more customers or reducing marketing costs, could help to increase revenue and the business's overall appeal.

6.2 Limitations and Future Research

Despite its contributions, this study has certain limitations. Firstly, in order to study stores that are similar to Lowe's, this study excluded smaller stores, and stores that also sell home improvement materials but are not in NAICS 444. This implies that the actual competition may be more intense than what the trade area analysis simulation suggests, which also means that the sales potential of many stores will be lower than estimated. If these stores could also be included in future studies, it would further refine the accuracy of the model's estimates of sales potential.

Secondly, although the estimation results applied at the DA level demonstrate a good correspondence with provincial trade sales data, it is worth noting that the choice of expenditure variables does not necessarily fully represent the real retail sales and may be spurious. Therefore, the performance of this estimation method relative to actual sales still requires further evaluation. Moreover, after 2016, Statistics Canada published e-commerce sales data in addition to the original trade sales data, which could be incorporated into the assessment of estimates in future studies.

Thirdly, this study evaluates customers based on store size relative to competitors, assuming consumers are rational and make decisions based solely on the model's variables. However, this assumption may not always hold true, as consumer behaviour is also influenced by factors such as personal preferences, cultural values, and social networks, in addition to quantifiable indicators like store reputation, product assortment, and service quality (Essiz & Mandrik, 2022; Luck & Benkenstein, 2015; Qu et al., 2022). These factors can be incorporated to improve the model in future research.

Finally, it is important to emphasize that although the failure of non-financial factors often precedes financial factors, and will eventually have a detrimental impact on the company (Whitfield, 2018), geographic factors are not the only causes of retail failure. To obtain a more comprehensive understanding of a company's status, it is necessary to incorporate additional factors into an all-encompassing analysis. For example, Valencia Saravia and Wang (2016) looked at differences in geography, product, price, and service in their study of Best Buy Canada. Analysis of these aspects could also be included in future studies.

Appendix A

Table A1. Canadian Annual Retail Financial in 2016 and 2021

NAICS Name	NAICS Code	Total Operating Revenue ($ Million)		Growth Rate
		2016	2021	
Motor vehicle and parts dealers	441	149,586	189,753	26.85%
Furniture and home furnishings stores	442	18,426	21,218	15.15%
Electronics and appliance stores	443	13,796	14,889	7.93%
Building material and garden equipment and supplies dealers	444	35,547	50,794	42.89%
Food and beverage stores	445	123,196	147,033	19.35%
Health and personal care stores	446	48,380	58,465	20.85%
Gasoline stations	447	56,517	64,515	14.15%
Clothing and clothing accessories stores	448	33,472	32,697	-2.32%
Sporting goods, hobby, book and music stores	451	12,971	14,105	8.75%
General merchandise stores	452	64,912	86,363	33.05%
Miscellaneous store retailers	453	14,777	23,461	58.77%
Retail trade	44-45	571,579	703,293	23.04%

Note. Adapted from Statistics Canada (2023).

Table A2. Population and Landarea in Ontario CMAs (2021)

Name	Population		Landarea		Population Density
	#	%	km^2	%	(Person/km^2)
Toronto	6,202,225	48.41%	5,903	10.58%	1,051
Ottawa - Gatineau (Ontario part)	1,135,014	8.86%	4,665	8.36%	243
Hamilton	785,184	6.13%	1,373	2.46%	572
Kitchener - Cambridge - Waterloo	575,847	4.49%	1,092	1.96%	527
London	543,551	4.24%	2,661	4.77%	204
St. Catharines - Niagara	433,604	3.38%	1,397	2.50%	310
Windsor	422,630	3.30%	1,803	3.23%	234
Oshawa	415,311	3.24%	903	1.62%	460
Barrie	212,856	1.66%	897	1.61%	237
Kingston	172,546	1.35%	1,919	3.44%	90
Greater Sudbury / Grand Sudbury	170,605	1.33%	4,187	7.50%	41
Guelph	165,588	1.29%	595	1.07%	278

Brantford	144,162	1.13%	1,074	1.92%	134
Peterborough	128,624	1.00%	1,508	2.70%	85
Thunder Bay	123,258	0.96%	2,551	4.57%	48
Belleville - Quinte West	111,184	0.87%	1,338	2.40%	83
Chatham-Kent	104,316	0.81%	2,465	4.42%	42
Sarnia	97,592	0.76%	1,117	2.00%	87
Kawartha Lakes	79,247	0.62%	3,034	5.44%	26
Sault Ste. Marie	76,731	0.60%	803	1.44%	96
North Bay	71,736	0.56%	5,315	9.52%	13
Norfolk	67,490	0.53%	1,598	2.86%	42
Cornwall	61,415	0.48%	509	0.91%	121
Woodstock	46,705	0.36%	56	0.10%	827
Timmins	41,145	0.32%	2,955	5.30%	14
Orillia	33,411	0.26%	29	0.05%	1,171
Stratford	33,232	0.26%	30	0.05%	1,107
Owen Sound	32,712	0.26%	624	1.12%	52
Brockville	31,661	0.25%	577	1.03%	55
Centre Wellington	31,093	0.24%	409	0.73%	76
Midland	27,894	0.22%	61	0.11%	459
Wasaga Beach	24,862	0.19%	57	0.10%	433
Collingwood	24,811	0.19%	33	0.06%	748
Pembroke	23,814	0.19%	553	0.99%	43
Essa	22,970	0.18%	280	0.50%	82
Cobourg	20,519	0.16%	22	0.04%	916
Tillsonburg	18,615	0.15%	22	0.04%	839
Petawawa	18,160	0.14%	165	0.30%	110
Port Hope	17,294	0.13%	279	0.50%	62
Kenora	14,967	0.12%	212	0.38%	71
Ingersoll	13,693	0.11%	13	0.02%	1,076
Hawkesbury	12,010	0.09%	13	0.02%	930
Elliot Lake	11,372	0.09%	696	1.25%	16
Hawkesbury (Ontario part)	10,194	0.08%	10	0.02%	1,009
Total	12,811,850	100.00%	55,805	100.00%	230

Note. Adapted from Statistics Canada (2023b).

Table A3. Data Dictionary of the CSCA Retail Chain Database

Variable Name	Description
CONGLOMERATE_NAME	The name of the company
CHAIN_NAME	Store name
POSTAL_ADDRESS	Store address
POSTAL_FSALDU	Store postal code (6 digits)
NAICS2012_3_DIGIT_CODE	NAICS code (3 digits)
COORD_X	Store latitude
COORD_Y	Store longitude
EST_SIZE	Estimated store size
UPDATE_DATE	Record time

Note. Adapted from CSCA (2023a).

Table A4. Proportion of Spending for Home Improvement (2016)

Province Name	All	Lowest	Second	Third	Fourth	Highest
Newfoundland and Labrador	3.4%	3.7%	3.6%	3.0%	3.0%	3.1%
Prince Edward Island	2.3%	1.9%	2.6%	2.2%	1.9%	1.5%
Nova Scotia	3.5%	5.0%	2.4%	2.5%	2.7%	3.0%
New Brunswick	2.8%	2.8%	2.3%	2.4%	2.2%	2.2%
Quebec	2.8%	2.8%	3.0%	2.3%	2.4%	1.8%
Ontario	3.2%	3.9%	4.1%	3.2%	2.5%	2.9%
Manitoba	3.3%	3.2%	2.4%	3.5%	3.4%	2.6%
Saskatchewan	3.2%	5.5%	3.2%	3.8%	2.8%	2.7%
Alberta	2.6%	4.9%	3.8%	3.0%	2.5%	2.8%
British Columbia	2.9%	5.9%	2.9%	3.3%	2.5%	2.2%

Note. Adapted from Statistics Canada (2021) and Statistics Canada (2023b).

Table A5. Number of Lowe's, RONA and The Home Depot Stores in Ten Provinces

Name	Lowe's		RONA		The Home Depot	
	2016	2021	2016	2021	2016	2021
Newfoundland and Labrador	0	0	1	0	1	1
Prince Edward Island	0	0	0	0	1	1
Nova Scotia	0	0	0	2	4	4
New Brunswick	0	0	0	0	3	3
Quebec	0	0	40	39	22	22
Ontario	33	36	19	13	88	88
Manitoba	0	2	3	2	6	6
Saskatchewan	3	2	2	2	4	4
Alberta	7	15	6	1	27	27
British Columbia	1	6	4	2	25	25
Total	44	61	75	61	181	181

Note. Adapted from CSCA (2023a).

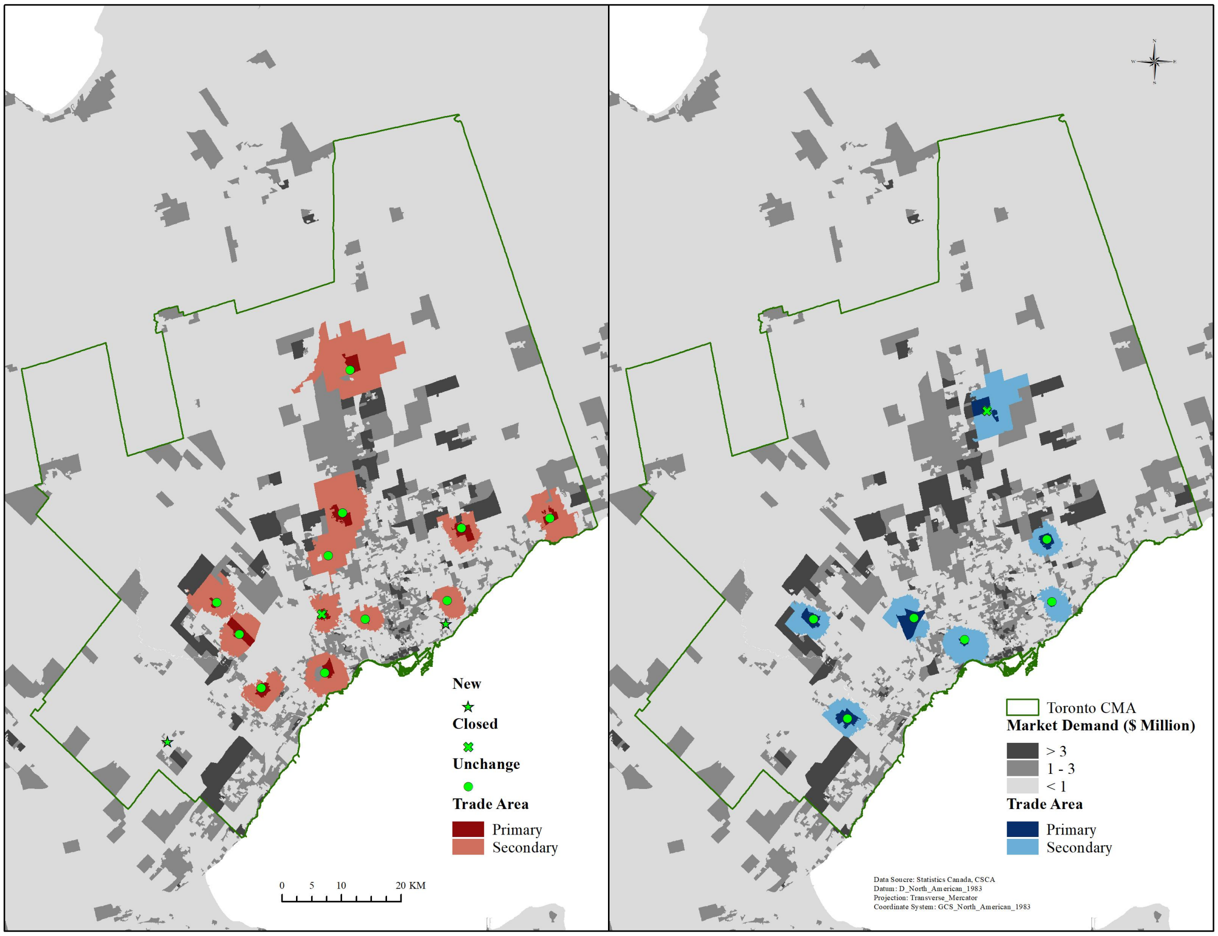
Table A6. Sales Potential Details for The Home Depot Stores in Toronto CMA (2016)

Store ID	Chain Name	Store Size (1,000 square ft)	Sales Potential In Trade Area ($ Million)			
			Primary	Secondary	Pri + Sec	Total
221	The Home Depot	95.0	22.1	3.2	25.3	46.4
145	The Home Depot	100.0	17.6	2.0	19.6	46.5
158	The Home Depot	98.5	8.3	6.9	15.2	48.5
205	The Home Depot	75.0	8.8	18.6	27.3	60.6
131	The Home Depot	85.4	12.5	18.0	30.5	61.3
207	The Home Depot	98.4	/	12.7	12.7	62.5
191	The Home Depot	115.0	8.3	17.1	25.4	62.7
231	The Home Depot	98.4	7.7	9.2	16.8	64.7
211	The Home Depot	115.0	0.2	7.8	8.0	68.2
153	The Home Depot	110.0	8.4	21.6	30.0	70.3
217	The Home Depot	113.0	12.9	24.2	37.2	71.4
142	The Home Depot	94.0	12.5	14.4	26.8	73.3
275	The Home Depot	100.0	0.2	3.9	4.2	74.2
247	The Home Depot	138.0	17.3	17.8	35.1	82.7
137	The Home Depot	110.0	5.4	29.5	34.9	84.6
120	The Home Depot	120.9	8.9	15.7	24.6	84.8
223	The Home Depot	126.0	1.2	9.9	11.1	86.3

253	The Home Depot	95.0	14.0	20.2	34.2	87.2
284	The Home Depot	131.0	12.9	16.1	29.0	89.0
175	The Home Depot	131.0	9.2	14.6	23.8	89.9
182	The Home Depot	115.0	14.0	23.4	37.5	90.1
130	The Home Depot	130.0	1.4	24.6	26.0	90.4
215	The Home Depot	130.4	4.7	18.8	23.5	102.9
201	The Home Depot	150.0	6.4	16.5	22.9	106.5
277	The Home Depot	107.2	6.3	21.0	27.3	106.7
218	The Home Depot	120.0	26.4	38.8	65.3	113.8
233	The Home Depot	115.0	15.5	41.0	56.5	118.5
163	The Home Depot	140.0	2.1	30.9	33.0	121.0
270	The Home Depot	130.0	17.1	31.2	48.2	131.7
280	The Home Depot	115.0	5.7	30.0	35.7	136.1
173	The Home Depot	184.0	14.8	39.2	54.0	138.2
260	The Home Depot	131.0	1.3	16.3	17.6	157.1
241	The Home Depot	130.0	7.5	30.2	37.7	161.1
276	The Home Depot	184.0	15.3	44.7	60.0	178.2
212	The Home Depot	147.0	0.6	48.0	48.6	196.7
226	The Home Depot	131.0	22.1	57.4	79.5	219.7
190	The Home Depot	123.0	45.0	73.9	118.8	225.0

Appendix B

Figure B1. Lowe's and RONA Store Changes in Toronto CMA Between 2016 and 2021



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