

Retail Patronage Modeling: A Systematic Literature Review Approach

แบบจำลองการใช้บริการร้านค้าปลีก: วิธีการทบทวนเอกสารอย่างเป็นระบบ

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Abstract

Marketers always search for growing in store patronage. It is important for retailers to gain better understanding of their consumers. Precise improving store attributes can affect store patronage. Modeling retail patronage will gain insight into this improvement. The aims of this review consist of: (1) to review store attributes and situational factors that impact on store patronage and (2) to review a predictive model to determine store patronage across retail formats. To establish this systematic review, the research aims and research questions are formulated; and then the mapping of the field of the study is defined. Next, the methodology shows how to select and evaluate the papers followed by the analysis and synthesis the data, and the classification of evidence is shown. The findings show different dimensions of store patronage. Consumer demographics, store attributes and different situational influences are described. Finally, modeling approaches with their criticism are presented.

Keywords: Retail format choice, Shopping trips, Situational factors, Store patronage modeling, Systematic literature review

Paper type: Academic

บทคัดย่อ

นักการตลาดพยายามมองหาวิธีการที่จะเพิ่มลูกค้าที่มาใช้บริการร้านค้า ดังนั้นจึงจำเป็นอย่างยิ่งที่ผู้ประกอบการร้านค้าต้องทำความเข้าใจลูกค้าอย่างแท้จริง ตลอดจนการปรับปรุงองค์ประกอบต่างๆ ของร้านค้าอย่างถูกต้องมีผลกระทบต่อลูกค้าที่มาใช้บริการร้านค้าโดยตรง แบบจำลองการใช้บริการร้านค้าเป็นเครื่องมือสำคัญในการทำความเข้าใจพฤติกรรมและพยากรณ์การใช้บริการร้านค้า วัตถุประสงค์ของการศึกษาเป็นประกอบด้วย ประการแรกเป็นการทบทวนคุณลักษณะของร้านค้าปลีกและปัจจัยที่เกี่ยวข้องที่มีผลกระทบต่อลูกค้าที่มาใช้บริการร้านค้า ประการที่สองเป็นการทบทวนแบบจำลองการใช้บริการร้านค้าปลีกเพื่อการพยากรณ์การใช้บริการร้านค้าใน การทบทวนนี้ใช้วิธีการทบทวนเอกสารอย่างเป็นระบบ เริ่มจากการกำหนดเป้าหมายของการวิจัย กำหนดค่าตามในงานวิจัย กำหนดเดือนที่จะดำเนินการ และขอบเขตในการศึกษา กำหนดวิธีดำเนินการ การเลือกและการประเมินคุณภาพเอกสารที่จะนำมาทบทวน การวิเคราะห์และการ สังเคราะห์เอกสารที่ทบทวน การจำแนกเอกสารตามหลักเกณฑ์ต่างๆ การสรุปข้อเท็จจริงที่ได้จากการทบทวนเอกสาร ซึ่งประกอบด้วยการ แสดงมิติต่างๆ ของลูกค้าที่มาใช้บริการร้านค้า คุณลักษณะของลูกค้า คุณลักษณะของร้านค้า และปัจจัยที่เกี่ยวข้องที่มีผลกระทบต่อลูกค้า ที่มาใช้บริการร้านค้า ขั้นตอนสุดท้ายเป็นการรายงานผลแบบจำลองการใช้บริการร้านค้าปลีก

คำสำคัญ: การเลือกรูปแบบร้านค้า การเดินทางจับจ่ายใช้สอย ปัจจัยในการเลือก แบบจำลองการใช้บริการร้านค้า การทบทวนเอกสาร อย่างเป็นระบบ

1. Introduction

Thailand has been one of the key emerging markets in Asia in recent decades; this has led to rapid growth in household consumption (Banwell et al., 2013). In recent years, the pattern of consumers has dramatically

changed due to the coming of modern trade firms, e.g. Tesco, 7-eleven (USDA, 2012).

Agriculture and Agri-Food Canada (2012) reports that in Thailand traditional grocery retailers, e.g. wet market, food stall, share 62% of grocery sales;



however, consumers are continuously shifting their shopping destination to modern and larger formats, e.g. hypermarkets, instead of small, independently owned grocers. In terms of non-store formats, Agriculture and Agri-Food Canada (2012) notes that in Thailand internet-based retailing has taken off, but most internet retailing are non-food items. However, by the time a current search, Tesco has just operated the internet retail but its service area is within only urban areas in a few major cities.

Most Thai consumers, particularly those who live in upcountry, still visit wet markets to buy their fresh food products as they perceive that products sold at wet markets are fresh and cheaper (USDA, 2004). The same source reports that Thai consumers frequently visit wet markets with an average of 18 visits per month, convenience stores at least 6 times a month, and 4 times a month for supermarket and hypermarket commitments. Even though the market share has fallen, traditional markets remain the largest portion of a food retailer. This occurs in many Asia countries, e.g. Taiwan, Hong Kong, India, and Indonesia (Canada, 2012).

Several researchers (e.g. Carpenter & Moore, 2006; Reutterer & Teller, 2009; Walters & Jamil, 2003) have found that store attributes impact on retail patronage. Precise Improving the store attributes can affect customer patronage (Reutterer & Teller, 2009). Predictive retail patronage modeling (e.g. Bhatnagar & Ratchford, 2004; Solgaard & Hansen, 2003) will gain insight into understanding the relationship between store attributes and retail patronage. From extent literature, particularly in Thailand, there is no systematic literature review on the store attributes that impact on retail patronage and the predictive models to determine store patronage.

2. Objectives

The aims of this review consist of: (1) to review store attributes and situational factors that impact on store patronage and; (2) to review a predictive model to determine store patronage across retail formats.

The focus study area is the intersection of three main fields including: (a) store patronage, i.e. retail format choice; (b) store attributes and consumer demographics; and (c) situational condition of shopping trips.

3. Methodology

The review is conducted using a systematic review approach (Denyer & Tranfield, 2009). Rousseau, Manning, and Denyer (2008) provide a useful distinction between a traditional literature review and a systematic literature review. The systematic review approach seeks to identify all the available evidence with respect to a defined field of a study. To conduct a systematic review, the research aims and research questions will be formulated; and then the mapping of the field of the study will be analyzed. Next, the methodology will show how to select and evaluate the papers followed by the analysis and synthesis the data. Finally, the classification of evidence and the findings will be presented.

The main objective of this section is to construct a review protocol. The review process is "systematic, transparent and reproducible" to ensure that the outcomes will be minimized error and bias (Tranfield, Denyer, & Smart, 2003).

3.1. Review process

In line with the proposition in the handbook by Denyer and Tranfield (2009) and "fit for purpose" protocol (Macpherson & Jones, 2010), the systematic review is conducted as the following five steps:

1. Research question formulation: by defining research aims, and developing research questions.
2. Scoping the field of study: by mapping the field of the study.
3. Study selection and evaluation: by producing a review protocol.
4. Analysis and synthesis: by conducting a systematic search, extracting results and bringing them together in a logical way.
5. Reporting and using the results: by classifying evidence and reporting findings.

3.2. Review protocol

A review protocol comprises of a good search strategy which can efficiently find the relevant literature and minimizes an absence of an essential source. After the field of the study has been mapped, keywords and search strings are set up. These search strings are examined in various databases resulting in a limited number of articles (N=304), then these papers are

screened by a title and an abstract for a relevant subject (N=37). According to Greenhalgh and Peacock (2005), the systematic review cannot rely solely on protocol-driven search strategies. Other approaches such as "snowballing" (pursuing references of references), personal knowledge, asking colleagues, and browsing library shelves, should be utilized. Therefore, other resources such as books, web sites, and additional references are included, and then duplicated documents are excluded from the list (N=94). Finally, the ultimate results consist of core papers (N=43), which are further investigated and reported in the findings, and partly related documents (N=51), which do not directly connect to the main field of study.

Keywords are derived from the result of the scoping study. Search strings are defined in order to identify the intersection of study areas; irrelevant results are excluded from these search strings. The search strings are applied in three selected databases: Business Source Premier, Emerald, and Science Direct. First, Business Source Premier is the industry's most popular business research database including business, marketing and management. Second, Emerald is also a global publisher linking research and practice. Finally, Science Direct is a leading scientific database containing more than 2,500 peer-reviewed journals. Although the rigorous search strategy was conducted, some papers may be overlooked because of too specific or do not match keywords defined by authors. Thus, the branching strategy has been employed when crucial information is included in the reference, in particular academic papers.

To choose relevant papers that address the research questions, inclusion and exclusion criteria will be applied when examines a title, and an abstract, and then scans through a full text. These criteria and their rationale are shown in Table 1 and Table 2.

To evaluate the research papers, four assessment criteria are applied including journal ranking, literature review, outcomes, and contribution to knowledge as shown in

Table 3. If papers are evaluated with low quality or not applicable in any criterion, they will be excluded from the review process.

To manage information extracted from the papers, data extraction form the core papers are kept in a

database which easily helps to report statistics. Finally, the extracted data is brought together into a logical composition which is presented in the findings. The report is organized coherently with relevant information; arguments are made and the literature is criticized.

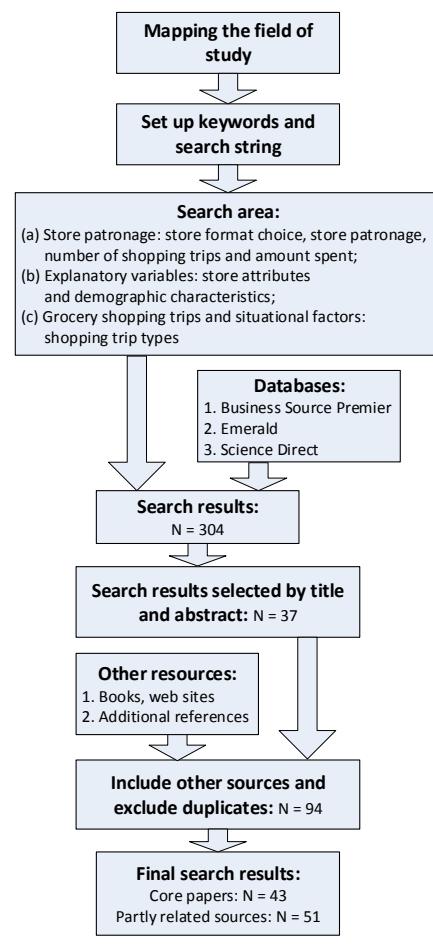


Figure 1: Search strategy flow chart

Table 1: Inclusion criteria

Criteria	Rationale
Academic papers/journals, conference proceedings, books, reports, website and so on.	Acquire as much information as possible, not limit to data sources.
Technical approaches relate to proposed method e.g. neural networks and multivariate statistical methods.	Potential approaches could apply to the problems.
No restriction regarding timeframe	The documents will not be restricted to a particular time period.

Source: Author

Table 2: Exclusion criteria

Criteria	Rationale
Publications in other language apart from English and Thai.	Researcher can acquire information on these languages.
Exclude irrelevant field e.g. electronic commerce, distribution management, category management.	They are not the focus area.

Source: Author

Table 3: Quality appraisal criteria

Criteria	Low	Medium	High
Journal ranking	No ranking or it is in beall's list	1- or 2-star journal	3- or 4-star journal
Literature review	Poorly cite the relevant literature, no discussion or discussion incomplete and inaccurate	Fairly cite and discuss the relevant literature	Appropriately cite the literature, good discussion of the relevant literature
Outcomes	Weak results or no information to assess this performance	Reasonable output, fairly state their performance	Excellent output, clearly state their performance
Contribution to knowledge	Little or no theoretical or empirical contribution	Justified theoretical or empirical contribution	Significant contribution to either theoretical or empirical contribution

Source: Author

Note: 4-star journal is a world-leading journal, 3-star journal is an internationally excellent journal, 2-star journal is internationally recognised journal, and 1-star journal is a national journal (School of Management, 2012)

4. Classification of Evidence

This section provides an analysis of evidence after search methodology has been carried out. The classifications of the evidence are described by year, journal, store patronage dimension, consumer demographics and attribute, situational factor, and modeling approach.

4.1. Evidence by year

The review papers resulting from the previous chapter indicate that there are a few studies before the year 1980 and during the period 1980s. The number of papers has increased considerably since the 1990s. Five

studies have been shown during the year 1991-1995 and ten studies have been found every five years period during the year 1996-2000 and the year 2001-2005. Finally, the next five year between the year 2006 and 2010, the number of papers has continuously increased into 13 papers as can be seen in Figure 2

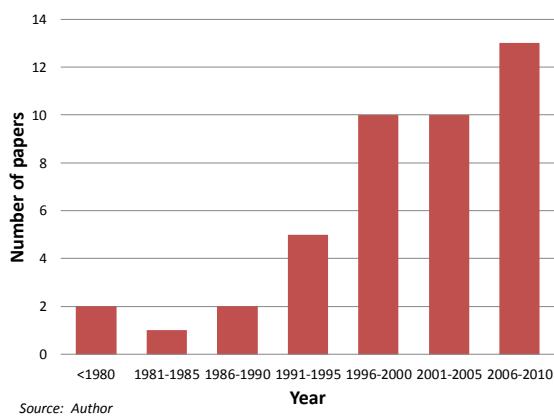


Figure 2: Evidence by year

4.2. Evidence by journal

The total 43 papers have been found after the strategy search in the previous section. Several studies come from four-star journal such as Journal of Retailing, Journal of Marketing Research, and Marketing Science and from three-star journal such as Journal of business research, Journal of Marketing Management and European Journal of Operational Research. The most prevalent papers are from Journal of Retailing (8 papers) followed by Marketing Letters (4 papers), respectively. The number of studies are from Journal of Business Research (3 papers), Journal of Retailing and Consumer Services (3 papers), and the International Review of Retail, Distribution and Consumer Research (3 papers). Some research come from International Journal of Retail & Distribution Management (2 papers), Journal of Consumer Behavior (2 papers), and Journal of Marketing Research (2 papers). Lastly, the rest are from various journals including international and top journals.

4.3. Evidence by geographic location

In terms of geographic locations, most papers, more than half of them, are conducted in North America, in particular the United States of America (e.g. Carpenter & Moore, 2006; E.J. Fox, Montgomery, & Lodish, 2004; Walters & Jamil, 2003). The second most frequent source is from Europe, especially the United Kingdom (e.g. Teller & Schnedlitz, 2012). Other sources are from Australia and New Zealand in Figure 3.

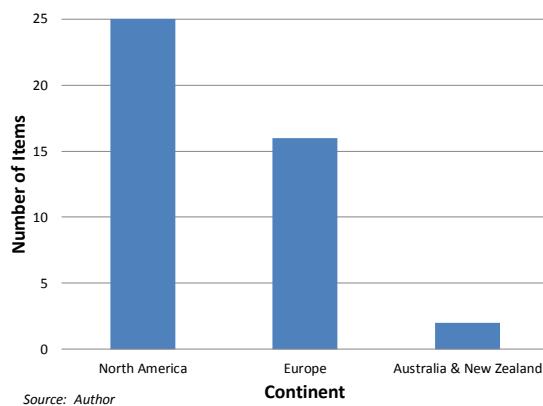


Figure 3: Evidence by geographic location

4.4. Evidence by store patronage dimension

Store patronage can be operationalized by different aspects as shown in Table 4. From the literature, the most frequent dimensions for store patronage are store format choice and store choice, respectively. A store format is comprised of stores that offer the same, or a very nearly the same, variety of product categories. Thus, the store format choice is the selection of the store format regardless a brand or a chain name. Some studies, however, combine these terms with other dimensions such as frequency of store visiting and the amounts of money spending for shopping trips. Other aspects are store switching and repeat trips, which consider only the extent to which customers choose to change or repeat stores no matter what types of stores are. Finally, there is a study regarding that store patronage is conceptualized by three components: utilitarian, hedonic and accessibility.

4.5. Evidence by consumer demographics and store attribute

The most popular consumer demographics are income and household size followed by education. The rest attributes (age, children under age 6, expenditure, gender, home owner, hour worked, marital status, race, and working woman) are presented in some studies as shown in Table 5.

Store-related attributes are grouped into service/convenience-related attributes and merchandise-related attributes as shown in Table 6 and Table 7. In terms of service/convenience-related attributes, spatial factors in terms of distance or travel time from home is the most popular attribute in the literature followed by

accessibility or parking availability close to the store, and pleasant atmosphere (frequency > 9). The next group of attributes frequently applied in the literature consist of friendly and helpful personnel, non-retail tenant mix, and short waiting time/queue at the checkout (frequency = 5-9). A number of attributes: quickly get an item, crowding, parent and children facilities, cleanliness, infrastructural services, special events, security, and transport provided by store, occasionally present in the journal (frequency between = 2-4).

Table 4: Evidence by store patronage dimension

Store patronage dimensions	No.
Store format choice (e.g. Bhatnagar & Ratchford, 2004; González-Benito, 2005)	6
Store choice (e.g. Popkowski Leszczyc, Sinha, & Sahgal, 2004; Popkowski Leszczyc & Timmermans, 2001)	4
Store format choice and amounts of money spent (E.J. Fox et al., 2004)	1
Store choice and frequency (Pan & Zinkhan, 2006)	1
Store choice and amounts of money spent (Davies, Goode, Moutinho, & Ogbonna, 2001)	1
Store switching (Popkowski Leszczyc, Sinha, & Timmermans, 2000)	1
Repeat trips (Popkowski Leszczyc & Timmermans, 1997)	1
Utilitarian, hedonic and accessibility (Yavas & Babakus, 2009)	1
Total	16

Source: Author

Finally, after sales services, cost structure of retailers, inventory holding costs of consumers, membership fee, store attitude, and store image are rarely applied in the studies (frequency = 1).

Table 5: Evidence by consumer demographics

Attributes	No.
Income (e.g. Popkowski Leszczyc et al., 2004; Popkowski Leszczyc & Timmermans, 1997)	5
Household size (e.g. Popkowski Leszczyc et al., 2004; Popkowski Leszczyc & Timmermans, 1997)	5
Education (e.g. Carpenter & Moore, 2006)	3
Age (Carpenter & Moore, 2006)	1
Children under age 6 (E.J. Fox et al., 2004)	1
Expenditure (Popkowski Leszczyc et al., 2004)	1
Gender (Carpenter & Moore, 2006)	1
Home owner (E.J. Fox et al., 2004)	1
Hour worked (Popkowski Leszczyc & Timmermans, 1997)	1
Marital status (Carpenter & Moore, 2006)	1
Race (Carpenter & Moore, 2006)	1
Working woman (E.J. Fox et al., 2004)	1
Total	22

Source: Author

In terms of merchandise-related attributes, low prices and wide range of assortment are the most frequent attributes present in the literature (frequency > 9) followed by high merchandise quality, and many discounts and special offers (frequency = 5-9). Other attributes are extant in the journal (frequency = 1-2).

Table 6: Evidence by service/convenience-related attribute

Attributes	No.
Distance/time from home (e.g. Popkowski Leszczyc et al., 2004; Reutterer & Teller, 2009)	11
Accessibility / parking space available close to the store (e.g. Reutterer & Teller, 2009)	10
Pleasant atmosphere (e.g. Reutterer & Teller, 2009)	10
Friendly and helpful personnel (e.g. Reutterer & Teller, 2009)	7
Non-retail tenant mix, e.g. variety of entertainment, cafes etc. (e.g. Teller & Reutterer, 2008)	6
Short waiting time / queue at the checkout (e.g. Reutterer & Teller, 2009)	5
Quickly get an item (e.g. Goodman & Remaud, 2015)	4
Crowding (e.g. Carpenter & Moore, 2006)	3
Parent and children facilities (e.g. Moutinho & Hutcheson, 2007)	3
Cleanliness (e.g. Carpenter & Moore, 2006)	2
Infrastructural services, e.g. rest/seat area, toilet, cash dispenser (e.g. Teller, Reutterer, & Schnedlitz, 2008)	2
Petrol station (e.g. Hutcheson & Moutinho, 1998)	2
Special/in-store events (e.g. Carpenter & Moore, 2006)	2
Security (e.g. Carpenter & Moore, 2006)	2
Transport provided by store (e.g. Hutcheson & Moutinho, 1998)	2

Source: Author

Table 6: Evidence by service/convenience-related attribute

(Cont.)

Attributes	No.
Cost structure of retailers (Bhatnagar & Ratchford, 2004)	1
After sales service (Solgaard & Hansen, 2003)	1
Hour of operation (Carpenter & Moore, 2006)	1
Household consumption rates (Bhatnagar & Ratchford, 2004)	1
Inventory holding costs of consumers (Bhatnagar & Ratchford, 2004)	1
Membership fees (Bhatnagar & Ratchford, 2004)	1
Store attitude (Pan & Zinkhan, 2006)	1
Store good image (Chang, Cho, Turner, Gupta, & Watchravesringkan, 2015)	1
Total	79

Source: Author

Table 7: Evidence by merchandise-related attribute

Attributes	No.
Low prices (e.g. Goodman & Remaud, 2015; Reutterer & Teller, 2009)	15
Wide range of assortment (e.g. Reutterer & Teller, 2009)	13
High goods quality (e.g. Reutterer & Teller, 2009)	9
Many discounts and special offers (e.g. Reutterer & Teller, 2009)	7
Product availability (e.g. Hutcheson & Moutinho, 1998)	2
Opportunity to try/taste a sample (Solgaard & Hansen, 2003)	1
Price strategy, e.g. HiLo/EDLP (Tang, Bell, & Ho, 2001)	1
Total	48

Source: Author

4.6. Evidence by situational factor

Situational factors are temporal factors influencing the consumer behavior apart from customer demographic and store attributes (see Section 5.2 for the definition). Shopping trip types are the most common situational factor which is often characterized as major and fill-in shopping trips as shown in Table 8. Some studies define these components by adding more specific definitions such as shopping primarily for price specials, and quick trips; or by dividing into particular time interval such as weekday, weekend, and month-end shopping trips. Mattson (1982) characterizes the situational factor as the combination of time pressure and whether a shopping for a gift or for oneself. Teller and Reutterer (2008) determine a situational factor, namely situational attractiveness, as a latent variable using a structural equation model. Popkowski Leszczyc et al. (2004) consider whether a shopping trip is a single- or multi-purpose. Finally, Van Kenhove, De Wulf, and Van Waterschoot (1999) define five task definitions for DIY products.

4.7. Evidence by retail format/choice set criteria

Evidence by retail format or choice set criteria is indicated in Table 9. Assortment, size and pricing are the most frequent criteria to categorize retail formats while less criterion is a promotion policy, respectively. Other criteria such as physical development characteristics and services are used by some studies. Popkowski Leszczyc and Timmermans (2001) uses shopping strategies operationalized by store types and the different bundle of goods in order to define a choice set. Interestingly, most research applied bi- or multi-polar to categorize such formats or choice set but there are a small number of studies using solely criterion i.e. size or physical development characteristic.

Table 8: Evidence by situational factor

Situational factors	No.
Trip types: major and fill-in shopping trips (e.g. Nordfalt, 2009; Reutterer & Teller, 2009)	4
Trip types: weekday, weekend, and month-end shopping trips (Popkowski Leszczyc & Timmermans, 2001)	1
Trip types: quick, fill-in, pantry stocking, and special purchase (IRI, 2006)	1
Trip types: major, fill-in, and shopping primarily for price specials (Walters & Jamil, 2003)	1
Trip types: fill-in shopping trips (Popkowski Leszczyc & Timmermans, 1997)	1
Time pressure and shopping for a gift or for oneself (Mattson, 1982)	1
Situational attractiveness (Latent variable) (Teller & Reutterer, 2008)	1
Single- and multi-purpose (Popkowski Leszczyc et al., 2004)	1
Five task definitions for DIY (Van Kenhove et al., 1999)	1
Total	12

Source: Author

4.8. Evidence by modeling approach

Econometrics models, in particular multinomial/binomial logit models, are the most popular method in order to predict store patronage, whereas specific econometrics models such as hazard models, type-2 Tobit models, Probit models and Poisson regression are often developed in a specific purpose in order to model store behavior as can be seen in Table 10. From the literature review, there are a number of studies employed an artificial neural network approach; however, a limited number of models link directly to store patronage.

Table 9: Evidence by retail format/choice set criteria

Retail format/choice set criteria	No.
Assortment and pricing (Burt & Sparks, 1995)	1
Assortment and promotional policies (Briesch, Chintagunta, & Fox, 2009)	1
Assortment, pricing and promotional policies (E.J. Fox et al., 2004)	1
Assortment, pricing and services (Carpenter & Moore, 2006; Solgaard & Hansen, 2003)	2
Physical development characteristics (Teller, 2008; Teller et al., 2008)	2
Shopping strategies by store types and goods (Popkowski Leszczyc & Timmermans, 2001)	1
Size (Reutterer & Teller, 2009)	1
Size and assortment (Bhatnagar & Ratchford, 2004)	1
Size and pricing (González-Benito, 2001, 2005)	2
Size and promotional policies (Popkowski Leszczyc et al., 2004)	1
Total	13

Source: Author

Most causal relationships among several variables are explored by structural equation modeling or confirmatory factor analysis, while the exploratory research is often clarified by the descriptive and inferential statistical approaches such as an ANOVA and a linear regression technique. In addition, some studies use multivariate statistical methods such as exploratory factor analysis, cluster analysis, and SEM/CFA. A mixed method between qualitative and quantitative is found in research on the impact of task definition on store attributes and store choice. Finally, meta-analysis has been used to determine significant attributes influencing store patronage from several previous studies.

Table 10: Evidence by modeling approach

Modeling approaches	No.
Multinomial/Binomial Logit models (e.g. González-Benito, 2001; Popkowski Leszczyc & Timmermans, 2001; Reutterer & Teller, 2009)	12
Artificial neural network (e.g. Bejou, Wray, & Ingram, 1996; West, Brockett, & Golden, 1997)	9
Specific econometrics models e.g. Hazard model (Popkowski Leszczyc et al., 2000), type-2 Tobit model (E.J. Fox et al., 2004), Probit model and Poisson regression (Popkowski Leszczyc & Timmermans, 1997)	6
Descriptive, regression, and ANOVA (e.g. Walters & Jamil, 2003)	5
SEM/CFA models (e.g. Teller, 2008)	3
Factor analysis, cluster analysis, and Logit model (e.g. Bloch, Ridgway, & Dawson, 1994)	2
Cluster analysis (Teller et al., 2008)	1
Mixed method: qualitative and quantitative (ANOVA)	1
Meta-analysis (Pan & Zinkhan, 2006)	1
Total	40

Source: Author

5. Findings

5.1. Store patronage and its attributes

5.1.1. Dimensions of store patronage

A term “patronage” can be characterized into several dimensions such as whether or not to shop (e.g. Popkowski Leszczyc & Timmermans, 1997), where to shop (e.g. Solgaard & Hansen, 2003), how often visit (e.g. Gorton, Sauer, & Supatpongkul, 2011), and how much to spend (e.g. Davies et al., 2001). Many studies use only one dimension to represent the store patronage. The most frequent dimension concerns where to shop or “store choice” (e.g. González-Benito, 2001; Solgaard & Hansen, 2003) while the other dimensions are often ignored.

A number of studies consider two dimensions to represent the store patronage. For example, Pan and Zinkhan (2006) regarded store patronage as two features: store choice, and frequency of visit. Popkowski Leszczyc et al. (2000) focused on a problem of deciding where and when to shop. E.J. Fox et al. (2004) considered the store

choice and expenditure across retail formats in their models.

5.1.2. Consumer demographics

Consumer demographic affects store patronage as explanatory variables from a demand side (González-Benito, 2001). Crask and Reynolds (1978) found that frequent patrons of department stores tended to be younger, more educated, and had higher incomes compared to those attributes of non-frequent patrons. E.J. Fox et al. (2004) found that household size, income, and level of education influence store format choices across three formats: grocery stores, mass merchandisers, and drug stores.

5.1.3. Store-related attributes

Location has been a key factor influencing the store patronage since the early studies by Reilly (1931) and Huff (1964). However, several researchers (e.g. Carpenter & Moore, 2006; E.J. Fox et al., 2004) argued that not only the location, but there are also other important factors affecting the store patronage.

Typically main attributes which influent store patronage such as location, pricing, promotion, accessibility, assortment, customer services, and atmosphere are often mentioned (e.g. Carpenter & Moore, 2006; Popkowski Leszczyc et al., 2000).

Nielsen (2000) showed that a good value for money is the most important indicator. The literature shows that a number of attributes such as assortment, quality of products, convenience etc. can potentially be represented consumer services. Correspondingly, Briesch et al. (2009) found that convenience, represented by travel distance, has a more effect on store choice than price and assortment. The costs incurred by consumers can be determined by the price of products and the use of time and money for travel to and from a retail store, which is a function of a location.

Solgaard and Hansen (2003) pointed out that the positioning of price plays a more important role than that of products and brands. They indicated that price level, assortment and location were important factors for consumers' choice between major store formats, while quality and service did not distinguish between these formats. However, their study focused on only the major supermarket formats; small store formats were not included in their model. In terms of pricing strategy, Bell

and Lattin (1998) observed that large basket shoppers prefer to shop at the store using everyday low price (EDLP) formats, whereas small basket shoppers prefer high and low (HiLo) pricing strategy.

Seiders and Tigert (2000) showed that the primary reasons for customers supporting supercenters were low prices and range of product assortment compared to those of supporting traditional supermarket are more significant on location or, in some cases, product quality and assortment. However, E.J. Fox et al. (2004) indicated that frequency of promotion and product assortment were higher influential on store patronage than price.

Some researchers have found that not only store attributes and consumer demographics, but also other factors influence the retail format choice. Bhatnagar and Ratchford (2004) have shown that the optimality of different retail formats depended on membership fees, travel costs, consumption rates, perishability of products, inventory holding costs of consumers, and cost structures of retailers.

5.2. *Situational influences*

A number of studies (e.g. Bhatnagar & Ratchford, 2004; Carpenter & Moore, 2006) has been ignored situational influences; as a result, they cannot explain the store patronage behavior under several circumstances. Extensive evidence has shown that store patronage is highly dependent upon shopping situation. Many major retailers increasingly target customers according to the purpose of their shopping trips (Edward J. Fox & Sethuraman, 2006). Belk (1975) pointed out that situation variables influence significantly on consumer behavior. He utilized a stimulus-organism-response paradigm (Chisnall, 1994) which has been modified by splitting a stimulus part into an object and a situation. Solgaard and Hansen (2003) emphasized that researchers could depict the utility not only a function of store attributes, and personal characteristics, but also a situational consideration.

Situational influence is defined as "all those factors particular to a time and place of observation which do not follow from a knowledge of personal (intra-individual) and stimulus (choice alternative) attributes and



which have a demonstrable and systematic effect on current behavior" (Belk, 1975, p. 158). Another adds that "situational considerations are, finally, a function of the consumer's awareness of events and/or the need to search for information that may affect his/her choice behavior" (Solgaard & Hansen, 2003, p. 171).

A widely accepted scheme of situational dimensions is physical surroundings, social surroundings, temporal perspectives, task definition, and antecedent states (Belk, 1975). A task definition is defined by several researchers: "task definition is the reason the consumption activity is occurring" (Hawkins & Mothersbaugh, 2010, p. 481); "task definition features a situation include an intent or requirement to select, ship for, or obtain information about a general or specific purchase" (Belk, 1975, p. 159).

Several studies have shown the importance of situation influence to store patronage. (Mattson, 1982) criticized the use of individual difference variables to forecast store patronage and ignored situational factors. In his study, he pointed out the significance of two situational factors: time-pressured and shopping for gift or oneself; he implied that the situational variables could make a prediction of store patronage more accurately.

According to the theory of the allocation of time developed by (Becker, 1965), the opportunity costs (i.e. the time that would be used for other shopping trips or non-shopping activities) have a negative relationship with a consumer's response to his/her purchases during shopping trips. For example, opportunity costs may be high for consumers on a fill-in shopping trip since the purpose of this trip is to quickly purchase for immediate consumption while the opportunity costs may be lower for consumers on a major shopping trip because a large amount of time is allocated to this trip. The theory of the allocation of time suggests that the opportunity costs of purchasing vary across different types of shopping trips.

5.2.1. Shopping trip types

Many researchers (Barbara E. Kahn & Schmittlein, 1992, p. e.g. ; Kollat & Willett, 1967) have categorized shopping trips as: "major shopping trips" and "fill-in shopping trips". Information Resources Inc. (IRI, 2006) has categorized the shopping trips into four groups: "quick shopping trips", "fill-in shopping trips", "pantry stocking trips", and "special purchase shopping trips". IRI classification differs from others in that it specifies "quick

shopping trips" as trips to meet an immediate need and typically result in purchases of one to three items with a ring of \$10, while "fill-in shopping trips" covers a broad range of product categories. "Pantry stocking trips" and "Special purchase shopping trips" are equivalent to the major shopping trips and the shopping primarily for price specials respectively in other classification system.

Major shopping trips require much time and effort because a large number of items are purchased to satisfy short and long-term needs (Barbara E. Kahn & Schmittlein, 1992; Kollat & Willett, 1967). Major shopping trips regularly conducted over a time period such as 1-2 weeks or 1 month and contributed to a significant share of a consumer's grocery budget (Solgaard & Hansen, 2003; Walters & Jamil, 2003). Furthermore, the major shopping trips are better planned compared to fill-in shopping trips (Nordfalt, 2009).

Fill-in shopping trips meet more pressing product needs with less time and effort used by consumers compared to major shopping trips needs (Barbara E. Kahn & Schmittlein, 1992; Kollat & Willett, 1967). The fill-in shopping trip is a trip to replenish perishable products that are frequently consumed. The fill-in shopping trips often buy fewer items and lesser amount of consumer's grocery spending compared to the major shopping trip (Walters & Jamil, 2003).

Shopping primarily for specials, often refer to "cherry-pickers" by practitioners, is a shopping trip when consumers visit a store for the main purpose of purchasing price specials offered by a vendor (Mulhern & Padgett, 1995).

Popkowski Leszczyc and Timmermans (1997) observed that most consumers have patterns of grocery shopping trips involving more than one store. They found that while the majority of consumers tend to shop at two to five different stores, consumers often shopped and spent most money at one certain store. However, a substantial amount of switching occurred; in particular 50 per cent of fill-in trips were a switching trip. Barbara E. Kahn and Schmittlein (1992) examined a relationship between shopping trips and promotional tools: coupon, in-store display, and advertising in newspaper. They have shown that the likelihood of purchase related to whether the shopping trip was a major or fill-in trip. Moreover, to distinguish the types of shopping trip can assist to

determine amounts of money spent on such shopping trips much accurately (B.E. Kahn & Schmittlein, 1989).

5.2.2. Shopping trip purposes

There has been a growth in one-stop shopping, because of an increase in variety of products and services at supermarkets (Messinger & Narasimhan, 1997). There also has been a shift from the number of household visiting grocery stores to that of visiting super centers in the recent years (A.C.Nielsen, 2002). This is particularly true today, where shopping malls have been increasing larger and customers have been increasing lack of time (Chebat, Gélinas-Chebat, & Therrien, 2005). One reason for this trend is the need for consumers to optimize their time doing the shopping by: (1) making multi-purpose shopping trips, reducing the number of trips at a particular time period and merging purchases for different items, or (2) buying in a large number of items when makes a single-purpose shopping trip (Popkowski Leszczyc et al., 2004).

A relatively new retail format such as a super center, which is commonly clustered in agglomerations, allows consumers to do single-stop multi-purpose shopping trips (Teller & Schnedlitz, 2012). Some retailers offer shoppers to perform activities other than grocery shopping by locating near to or inside of a shopping mall (Dellaert, Arentze, Bierlaire, Borgers, & Timmermans, 1998). The presence of the retail agglomeration which forming a cluster of heterogeneous stores provides consumers opportunity for multi-purpose shopping, while the presence of other grocery stores form a cluster of homogeneous retailers allows shoppers for comparison or cherry picking (Popkowski Leszczyc et al., 2004).

The multi-purpose shopping trips have not been examined extensively. For example, Popkowski Leszczyc et al. (2004) studied the effect of multi-purpose shopping on pricing and location strategy. Arentze, Oppewal, and Timmermans (2005) examined multi-purpose shopping trips to retail agglomeration affecting on consumer choice in terms of what to buy and where to buy. They found that agglomeration attracted not only multi-purpose but also single-purpose trips. However, their study considered the impact only on store choice; none of these have included other dimensions of store patronage such as amounts of money spent. The link between multi-purpose trips and retail patronage needs to be further explored.

5.3. Modeling approaches

In retail patronage context, exploratory research and descriptive research (Malhotra & Birks, 2007) often use basic statistical methods to describe their results (e.g. Carpenter & Moore, 2006) whereas causal research generally employ multivariate statistics or econometrics models such as linear regression models, logit models, and Probit models (Popkowski Leszczyc & Timmermans, 1997; Seetharaman et al., 2005). Several studies (e.g. Carpenter & Moore, 2006) use descriptive statistics to explain the relationship among consumer demographics, store attributes, and retail format choice. These methods give descriptive relationship; however, they do not have capabilities to "predict" retail patronage.

To predict retail patronage, researchers often employ several methods which can be classified into two streams: (1) modeling based on a spatial interaction theory and (2) approaches based on a random utility theory. Models of the first category are well known as "gravity models" which have been inspired by the works of Reilly and Huff (Berman & Evans, 2013). These models predict consumer patronage based on (a) an attraction of stores, e.g. size of stores; and (b) an accessibility of stores, e.g. distance between stores and consumers' homes. These models have been criticized that they predict similar patronage when stores are the same size and distance although their attributes are different.

The second approaches are well known namely "discrete choice models" which are often determined store choice behavior. These models have been developed under an assumption of utility-maximizing behavior by decision makers, and is often known as the random utility theory. The large number of studies utilized these approaches. For example, Popkowski Leszczyc and Timmermans (1997) applied a Probit model to simulate store-switching behavior whether customers made a repeat shopping or not. González-Benito (2001) used a logit model framework to study inter-format spatial competition of retail markets. Solgaard and Hansen (2003) developed a multinomial logit model to explain consumer's choice behavior between different supermarket formats. Reutterer and Teller (2009) used a multinomial logit model to identify store attributes that impact on store choice.

A number of researchers have developed their own specific econometrics models for the particular purpose of their studies. For example, Bhatnagar and Ratchford (2004) identify determinant factors affecting the retail format competition by building an analytically economic model. E.J. Fox et al. (2004) focused on store choice and expenditure across retail formats in their models. Popkowski Leszczyc et al. (2000) developed a hazard model, where store choice is depended on the timing of shopping trips, to measure the effects of consumer characteristics on grocery store choice and switching behavior.

The gravity models, discrete choice models and analytic econometrics models have a limitation in that they have to pre-specify a functional form of the model. For instance, for the logit model, the stochastic component of the utility function is assumed to be an extreme value distribution; while that of the Probit model is normally distributed. Moreover, outputs from the discrete choice models are discrete variables only.

The regression models restrict to a number of assumptions (Hair, Black, Babin, & Anderson, 2010): the linearity of the relationship between dependent and independent variables, constant variance of the error terms, independence of the error terms, and normality of the error terms distribution. Besides, the regression models provide solely a continuous output. The structural equation modeling and confirmatory factor analysis seek to explain the relationships among multiple variables (Hair et al., 2010). In doing so, they inspect the structure of interrelationships represented by a series of equations, like a series of linear regression equations. Figure 4 illustrates the retail patronage modeling approaches.

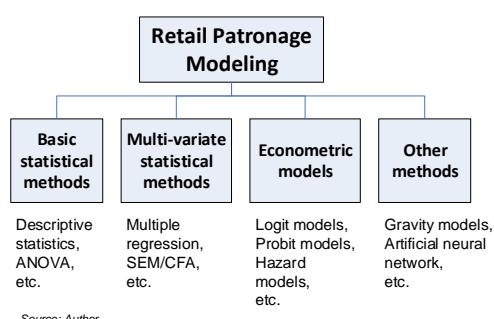


Figure 4: Retail patronage modelling approaches

6. Discussion and summary

This study employ a systematic literature review approach to review store attribute and situational factors that impact on store patronage and to review a predictive model to determine store patronage across retail formats. The systematic literature review seeks to identify evidence with respect to a defined field of a study, and then formulate research aims, research questions, and the mapping of the field of the study. The search methodology, the methods to select and evaluate the papers are formulated. Then, the classification of evidence and the findings are presented.

The findings show that several store attributes impact store patronage behavior. The most frequently service/convenience-related attributes have found in the literature are distance/time from home, accessibility/parking space available close to the store, and pleasant atmosphere, while the most frequently merchandise-related attributes are low prices, wide range of assortment, and high goods quality. These attributes may be included in further studies in Thai market context. Not only service-related and merchandise-related attributes, but also the situational factors, shopping trip types, and shopping trip purposes should be considered in the further studies. In addition, the store patronage across retail format has not been studied extensively. Particularly in Thailand, a published article from this systematic literature review has not been found.²²

In terms of modeling approaches, several exploratory and descriptive studies are conducted using basic statistical methods, whereas causal research usually utilizes multivariate statistical methods or econometric models. Retail patronage models often employ econometric models or other methods such as gravity models. In Thailand further studies in the retail patronage across retail format could conduct using econometric modeling approaches such as Logit models or specific modeling approaches because several publications related to the retail patronage across retail format were often found in the world-leading and internationally excellent journal.

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