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# Systematic Literature Review on Customer Switching Behaviour from Marketing and Data Science Perspectives

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## Abstract

*This paper systematically examines the literature review in the field of customer switching behavior. Based on the literature review, it can be concluded that customer switching behavior is a topic that has been widely researched, with a focus on various industries, particularly banking and telecommunications. Research trends in this area have shown a positive direction in recent years, and the amount of research being done in marketing and data science is relatively balanced. In marketing, correlational studies are predominant, with a focus on identifying relationships between customer satisfaction, price-related variables, attractiveness of alternatives, service failure, quality, and switching costs to switching behavior. The PPM model is also gaining popularity as an important development for switching behavior because it considers both push and pull factors. Data science research has shown promising results in predicting customer switching behavior, with each research paper achieving good predictive accuracy. However, research gaps spanning the fields of marketing and data science need to be addressed to provide a comprehensive understanding of the drivers of customer switching behavior. Overall, the literature review shows that customer switching behavior is an important concern for businesses, and further research in this area is essential to gain a better understanding of customer behavior and develop effective strategies to retain customers.*

Keyword: customer switching, marketing, data science

## 1. INTRODUCTION

The business landscape nowadays is occupied by an extensive number of competitors. The advancement of technology, as well as the decreasing capital needed to open a new business, has offered customers more choices. More and more customers have more options and flexibility to fulfil their needs and want. On the one hand, technology enables businesses to reach more customers by targeting marketing practices with more efficient spending. However, on the other hand, the use of technology in the industry also threatens current customers because they are bombarded with competitors' deals. This situation of the changing business landscape has prompted managers to find new strategies to keep their customers.

Losing customers is perceived as a severe drawback to future financial and potential earnings (Sathish et al., 2011 in Vyas and Raitani, 2014). From a business perspective, retaining current customers is more valuable economically than attracting new customers. It is because

customer acquisition costs exceed customer retention (Kotler, Bowen and Makens, 2009). It is known that the cost of customers acquisition could reach five times more than retaining the current (Mittal and Lassar, 1998 in (Vyas and Raitani, 2014). New customer acquisition needs advertising effort, promotional programmes, and a sales force, and it needs time to make them a profitable business (Athanassopoulos et al., 2001 in (Vyas and Raitani, 2014). For example, start-up businesses tend to give free service charges or significant vouchers to persuade customers to sign up as their users. Moreover, loyal customers are potentially giving more profit and are eager to promote the products to other (Ganesh, Arnold and Reynolds, 2000). Hence, business needs to understand the drivers of customer switching behaviour comprehensively to keep their competitiveness among competitors.

Researchers have paid close attention to customer switching behaviour for decades because of its significance to business performance. The benefits of customer retention can be defined into six customer behaviour intentions which are; resistance to counter persuasion, resistance to adverse expert opinion, having the patience to wait in short supply situations, willingness to pay a premium price, and willingness to recommend the products to their peers (Narayandas, 1998). Because of these benefits, it is reasonable that business practitioners are eager to retain their customers in the long term and reduce their switching behaviour.

Marketing and data science address customer switch behaviour by conducting different types of research trends. In marketing, research on customer switching behaviour primarily uses theoretical background, hypothesises building, and collects primary data by surveying, interviews, or experiments. On the other hand, computer science research puts less part on theoretical background and focuses on creating machine learning models from secondary data such as customer demography, customer activities, and customer reviews. The main goal of each field is also different. Marketing papers try to understand the drivers or variables that affect customer switches, while in data science, the priority is to create machine learning models with better prediction models by developing and comparing different approaches.

Marketing uses the term customer switch (Hussain *et al.*, 2022; Nguyen, McClelland and Thuan, 2022; Lin and Huang, 2023) and customer defection (Dawes, 2004; Santonen, 2007; Sands *et al.*, 2020), while in data science technical paper commonly use customer churn (Ahmad, Jafar and Aljoumaa, 2019; Amin *et al.*, 2019; Vo *et al.*, 2021). By definition, customer switch is customers' potential or actual behaviour to change or replace the current service provider with its competitors (Han, Kim and Hyun, 2011). Page, Pitt and Berthon (1996) stated that defection happens when customers stop using the product because they do not need it anymore or move to other providers. In addition, customer churn refers to the degree of product usage activity falling below the threshold or reaching zero consumption (Glady, Baesens and Croux, 2009). Even though there are different terminologies in marketing and data science, it refers to the same thing.

It is evident that each field has its own focuses and aims when researching customer switching behaviour. However, each area has its limitation in addressing the issue. The marketing field's strength is in understanding latent variables that drive churn and, at the same time, assessing the psychological aspect of customers while deciding to stop using the business product. But on practical levels, implementing the findings might be challenging since not all managers can access the practical aspect of latent variables. Data science research firmly addresses the churn phenomena based on a data-driven approach. It uses past data generated by the business or customers and generates future predictions on it. On a practical level, it is very implementable to customer data providers. However, the result is hardly generalised because companies might have different customer characteristics based on their target market and product categories.

## 2. METHODOLOGY

This literature review searched covered articles from the period from 1995 to 2023. To identify the relevant article, this study identified method referred to database recommendations from Evanschitzky *et al.*, (2012), which are Emerald, ScienceDirect, Proquest(ABI/INFORM), and EBSCO. The selected database covered a wide range of empirical and conceptual papers from any discipline, including business, marketing, operations, information system, dan computer science. From this database, 249 articles were obtained based on keyword searches "switching behaviour", "switching intention", customer switching behaviour", "customer defection", and "customer churn". The article selection is based on the most relevant page-per-page database and is carefully read by the researcher.

This paper not only investigates the paper from a specific industry but also attempts to cover a wide range of industries, from banks, telecommunication, hotel, and software. The first selected paper collection is diverse from each database. The study collected most of the articles from Sciencedirect (150), followed by Proquest (94) and Emerald (40). EBSCO shows the most miniature selected paper, which is 34 papers. Thus, the initial total number of collected papers is 318. The documents were stored in Zotero, the open-source reference management software to collect, manage and cite research-related materials. Zotero integration with web browsers automatically saves metadata such as titles, authors, abstracts, publishers, and PDFs in a cloud server synced with computer storage. After comparing double collections between four databases, 69 papers were excluded. The final number of selected documents is 249 articles. Then, this literature review stored the information in the data collection sheet. Primary data field used for journal classification; title, publication year, industry, customer switching behaviour drivers, country, classical hypothesis, method, accuracy, and sample/data size.

## 3. RESULTS AND DISCUSSION

The oldest research on customer switching behaviour found is (Keaveney, 1995a) which 5147 papers have cited. This paper defines seven drivers of switching behaviour: pricing, inconvenience, core service failure, service encounter failure, competition, ethical problems, and involuntary switching. Her research focused on multiple service industries, becoming one of the primary references for this topic.

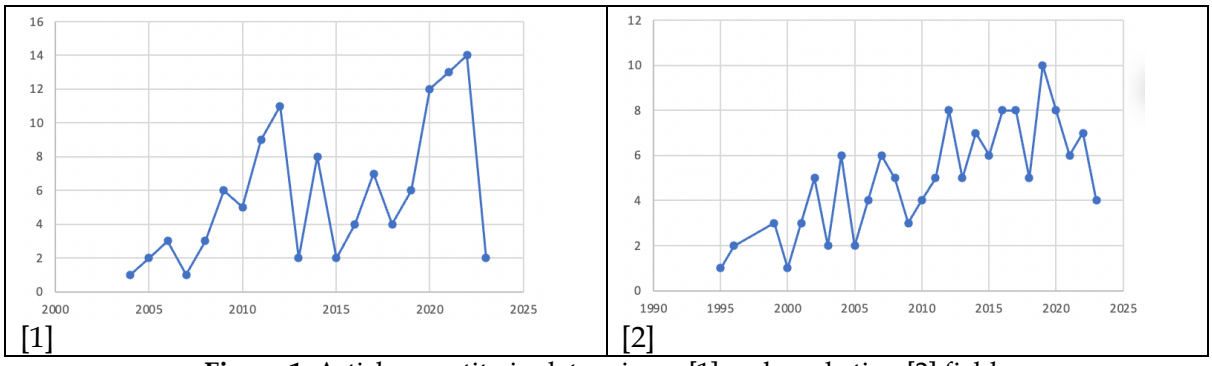


**Figure 1**. Article quantity in data science [1] and marketing [2] fields

The first appearance of research in customer switching behaviour in data science started in 2004, almost a decade after marketing in 1995. The research interest in data science keeps the positive trends with heavy fluctuation between 2013-2019. Then, the quantity increased intensively in 2020-2022. In marketing, the direction is quite similar, but it is clearly shown that the constant fluctuation over more than twenty years. Between 1995 and 2023, the paper produced in both fields was relatively equal. The marketing papers have 134 articles, while data science has 115.

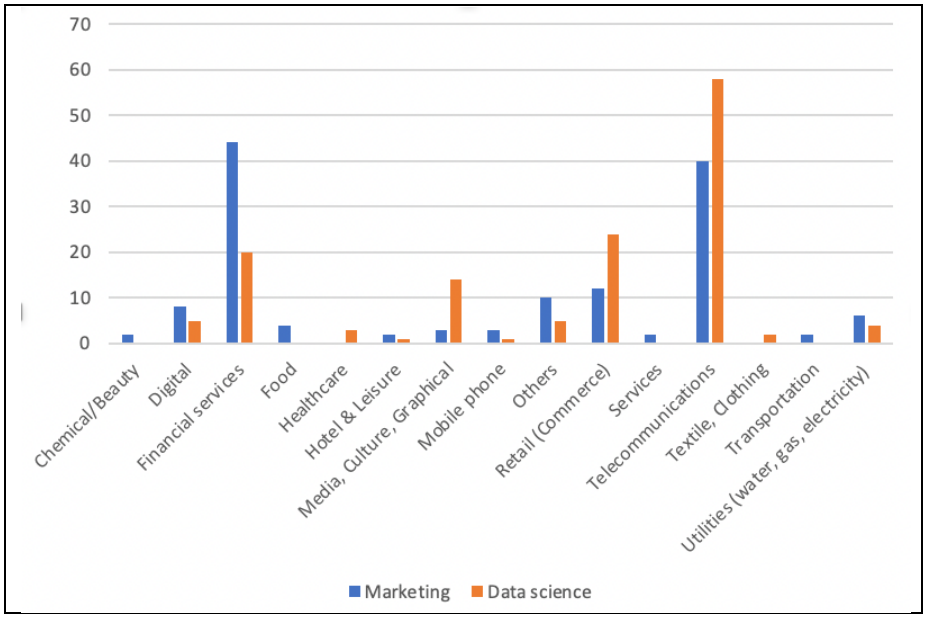


**Figure 2**. Research coverage based on Industry

Figure 2 shows that financial services and telecommunications are the most investigated industries by researchers. While in financial services, marketing publication is more than double of data science research (44 vs 20). However, in Telecommunication, data science articles exceed marketing (58 vs 40). The interest of researchers in these two fields might be because of the industry's market value or the data's availability. For example, Lannes and Stratton (2006) in (Clemes, Gan and Zhang, 2010) mention that there was a potential customer switch from the domestic bank in China to foreign competitors that would lead to losing nearly 1.8 trillion USD. Moreover, data-driven research in data science requires a vast amount of customer data. Brockett *et al.* (2008) used more than 100 attributes of bank customer data, and Landsman and Nitzan (2020) used nearly millions of customer records to predict customer churn in the telecommunication industry. The exact reasons go to retail and digital business. The other popular sectors are retail (36), media (17), digital, and utilities (10).

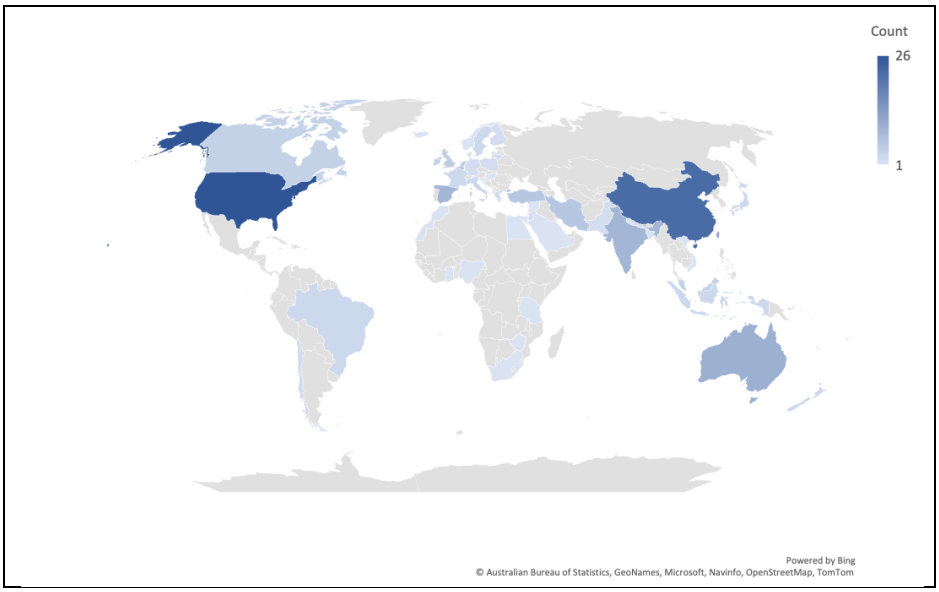


**Figure 3**. Research coverage based on country

Based on geographical area, the research is spread across 53 countries worldwide. Figure 3 shows that USA and China are the top countries where the research sample was taken. USA research accounts for 26 articles while China 22. However, several papers collected sample or data set in multiple countries or regions. Maldonado, López and Vairetti (2020) conducted research in North America and East Asia region, while (Buckinx and Van den Poel, 2005; De Bock and Poel, 2011; Coussement, Lessmann and Verstraeten, 2017; De Caigny, Coussement and De Bock, 2018; Postigo-Boix and Melús-Moreno, 2018), for instance, gathered their data set across Europe. It is also noticeable that research on multiple countries is commonly conducted in data science. It is because of the nature of the study that collected secondary data such as customer demography and behaviour activity is easier than primary data by survey or interview.

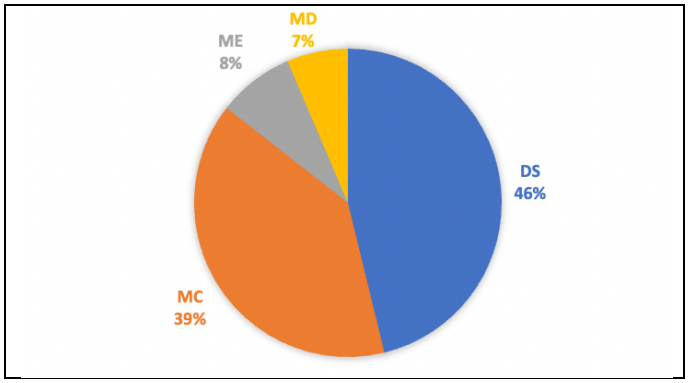


**Figure 4.** Percentage of research type
*DS: Data science, MC: Marketing-Correlational, ME: Marketing-Exploratory, MD: Marketing-Descriptive*

This literature review divides the research into two types: data-driven and theoretical-driven. Data-driven papers mostly come from data science publishers while theoretical-driven papers originate in the marketing or business fields. The marketing paper was then categorised into three groups based on previous practice by Cooper and Schindler (2014) in (Chuang and Tai, 2016); exploratory, descriptive and correlational.

Marketing research mostly focuses on correlational studies that investigate the effect of independent variables on dependent variables. It discusses the relation of the constructs in a particular context, such as the augmented reality (Nugroho and Wang, 2023), contractual-based business (Wirtz *et al.*, 2014a), or region and industry (Chigwende and Govender, 2020). Most studies used correlational analysis such as a structural equation model or regression analysis such as Wirtz *et al.* (2014b). Other research types exploratory and descriptive analysis contribute a limited number of research, 20 and 16, respectively. Exploratory research pursues new discoveries on undeveloped theories and research areas or tries to advance developed constructs to obtain new ideas or hypothesis (Swedberg, 2020). The research on micro failures by Sands *et al.* (2020) is a good example of it where it extends the concept of service failure and coins a novel driver of customer switching behaviour. This type of research is also typically conducted in a qualitative approach like Lees, Garland and Wright (2007), who tested the effect of utility maximisation, expectation disconfirmation and stochastic on the banking industry. On the other hand, descriptive analysis is a type of study that tries to answer the question of what rather than how or why some phenomenon happens (Nassaji, 2015). For example, research by Williams, Khan and Naumann (2011) surveyed customers' attitude about downsizing events in Fortune 100 companies.

In data science, the research is only grouped into one type. Most papers in this research attempt to discover new algorithms based on data analytics methods to predict customer churn in particular industries. In addition, the published article also investigates the best approach to processing data. For example, Burez and Van den Poel (2009) address the major

problem in data processing in this research area: class balance. Research on customer switching behaviour that utilised a data-driven approach commonly faced a huge difference in data between stayers and churners. It impacts the training and test data set. Moreover, the majority of data used are structured data such as the demography (Kim, Jun and Lee, 2014), call details (Huang, Buckley and Kechadi, 2010), or previous behaviour (Zhang *et al.*, 2012). However, unstructured data such as text is also utilised (Pustokhina *et al.*, 2021). The prediction accuracy is also satisfactory. The highest accuracy rate from the developed model is 99.35% with the machine learning algorithm random forest. The average accuracy level of collected research is 81.46% which is desirable.

Researchers found six major drivers as predictors of customer switching behaviour. They are satisfaction/dissatisfaction, price, switching cost, alternatives and competitors, quality, and service failure as described below.

**Table 1**
**Prominent Predictors of Customer Switching Behaviour**

| Predictors | Original hypothesis | Q | Definition |
|---|---|---|---|
| Satisfaction/dissatisfaction | Negative/positive | 38 | Overall evaluation of purchase experience with product or services that brings pleasure (Quoquab *et al.*, 2018) |
| Price | Negative | 38 | Price is a value of money that customer pay to get products or services. Price in customer switching behaviour is also related to high price, price increase, unfair pricing (Keaveney, 1995b). |
| Switching cost | Negative | 38 | Perception of cost that customer associate when switch form one product to others (Quoquab *et al.*, 2018) and it can be in the form of monetary and non monetary (Wirtz *et al.*, 2014b). |
| Alternatives & competitors | Positive | 36 | The availability of product substitution from competitors (Pick and Eisend, 2014). |
| Quality | Negative | 31 | The perception of product level of goodness, or a positive values that customer perceived after overall evaluation of a product (Pick and Eisend, 2014) |
| Service failure | Positive | 15 | Service failure happens when the customers encounter with some employees attitude or behaviour such as uncaring, unpolite, unresponsiveness via personal interaction (Keaveney, 1995b) |

Despite above defined variables, this paper also notices that Push-Pull Mooring has been used frequently in nine research such as Chou *et al.* (2016). The model initially explained the migration process coined by Moon (1995) and Lee, Lee and Feick (2001). It consists of pull factors, which are positive factors that attract people, and push factors that drive people away. In addition, it also incorporates personal, social, or situational variables called the mooring factors (Bansal, Taylor and James, 2005).

## 4. CONCLUSION AND IMPLICATIONS

This literature review addresses the research on customer switching behaviour in various industries. It also tries synthesising the drivers of customer switch in marketing and data science fields. By examining an article in a popular scientific journal database, this

research attempts to discover the main predictors for customer switching behaviour and to see the research gap that covers both marketing and data science fields.

Research on customer switching behaviour is mature, from conceptual papers to empirical studies. It also covers various industries, with most research focusing on solving the problems of banks and telecommunication. Even though the research interest started in 1995, intense investigation leap in 2011. The trend then fluctuated for around eight years before it rebounded and showed a positive direction again in 2019. The number of research is relatively balanced between data science and marketing. The marketing field is dominated by correlational papers such as the relationship between satisfaction, price-related variables, alternative attractiveness, service failure, quality, and switching cost to customer switch behaviour. The research in banks and telecommunication also gets enormous attention. In addition, the researcher also notices that the PPM model is quite popular as an important development to switching behaviour as it comprises both push and pull factors. Data science research showed a good predicting result in each research paper.

Although this paper has collected 249 empirical research, it has several limitations. First, it has not investigated the statistical analysis of each variable. The correlation between a dependent variable and its drivers could be analysed using effect size. The effect size represents the strength of the relationship between variables or groups. In this paper, it refers to the correlation between customer switches and their predictors (e.g. satisfaction, dissatisfaction, price, loyalty, and alternatives). A mean or total effect size of each variable means an average effect on the dependent variables. By determining the total effect size for each driver, the research would open the possibility for a detailed analysis of customer switch behaviour.

Second, this research has not grouped the paper based on sample characteristics. Sample homogeneity will lead to a better understanding of how certain groups of unit analysis react as they proceed in customer switching behaviour. It might affect the mean of the effect size of each variable. The fixed effect size model assumes that one true effect size comes from all the research sample data and any different results from sampling error. While random effect size accepts that there might be differences, high or low effect size is because of its heterogeneity (Dettori, Norvell and Chapman, 2022). This could happen because of the variety of this sample or the research interventions. For instance, age or generation sampling in customer switching behaviour might produce different levels of effect size (Dettori, Norvell and Chapman, 2022). Others, the difference in social-economic status or level of income makes sample demographics aspect could give the significant difference to the effect of customer switch behaviour drivers.

Third, these papers do not elaborate more on experimental design papers; Rockmann and Northcraft (2008), Wiebach and Hildebrandt (2012), Du *et al.* (2020). The practical design papers usually consist of a basic understanding of the customer switching process with a particular set environment. It enables the researchers to manipulate the independent variables in the controlled environment to clearly show the correlation between independent and dependent variables with limited external interventions. Due to the limited research on customer switching behaviour, this paper does not segment this research process into a specific analysis. Moreover, the collected experimental design papers also vary regarding research focuses.

Forth, even though this paper has followed the first paper collection method conducted by (Evanschitzky *et al.*, 2012), this study does not employ the other following sources; manually referencing the prominent paper that had collected the resource for analysis before, such as Keaveney (1995), manually search issue by issue in the world-leading marketing articles, contacting leading researchers for both conceptual and empirical research to ask for a paper suggestion, publish a request for identification process assistance in marketing academic list server (ELMAR), and manually reference relevant studies to get more

article from their references. Fifth, the bias between behaviour and intention might occur because this paper collects all relevant articles on switching behaviour and switching intention. In marketing, this term refers to different meanings and might differ in the actual business environment (Hino, 2017). Sixth, the search on data-driven or practical papers with the keyword 'customer churn' resulted in an extensive paper result. This broad result caused overwhelming articles, and the investigation stopped in Emerald and ScienceDirect databases. Lastly, data-driven research tends to use a massive number of drivers (data attributes). It deterred this study from investigating the attributes one by one instead of categorising them based on their characteristics.

Future research could incorporate the following suggestions. First, employ statistics analytics to determine the total effect size for each driver in a correlational study. It will allow the researchers to choose which drivers have the highest correlation with customer switching behaviour and how it is different from one industry or sample characteristics. Moreover, it could open more insight into the trends of correlation results in their research fields. Seconds, research on experiments could be investigated more as there are still limited studies in this research design. Third, for selected papers in the data-driven category, the following research could compare the accuracy and performance of each proposed model and algorithm to see the most performed one. Lastly, some studies use more than a hundred attributes in their data set, so they cannot be published directly in the article. Thus, it is better to contact the author to ask for more specific attributes used in their research.

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