IMPACT OF OMNICHANNEL RETAILING ON CUSTOMERS' PURCHASE DECISION JOURNEY IN THE CONSUMER GOODS SECTOR: A CASE OF THE BEAUTY CARE CATEGORY IN VIETNAM

by

Le Huynh Phuong Thuc, MBA

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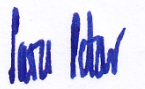

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Dedication

To my beloved children, this dissertation is dedicated to you. You are my inspiration and motivation to go through the challenges of this journey. I found my passion and resilience to continue fighting for my dream with your unwavering love and encouragement. May you always pursue your dreams with similar passion and determination that guided me through this endeavor, with all my love.

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Wholeheartedly thankful to my family, your patience, love, encouragement and belief in me have been my anchor throughout the whole journey. Thank you for helping me make this dream a reality.

And thank myself for not giving up and believing in myself.

Thank you.

ABSTRACT

IMPACT OF OMNICHANNEL RETAILING ON CUSTOMERS' PURCHASE DECISION JOURNEY IN THE CONSUMER GOODS SECTOR: A CASE OF THE BEAUTY CARE CATEGORY IN VIETNAM

Le Huynh Phuong Thuc
2024

Dissertation Chair: <Chair's Name>
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Aim:

This research aimed to examine the impact of omnichannel retailing on customers' purchase intention in the beauty care category within the Vietnam market. The impact of omnichannel retailing would be measured through the integration level defined by connectivity and consistency of the retail elements over customers' purchase intention. By employing a mixed-methods approach, the study sought to identify the impact of integration levels and the key retail mix elements, understand the significance, and analyze the relationships with customers' purchase intention.

Method:

The study adopted a two-phase approach. In the qualitative phase, face-to-face interviews were conducted with omnichannel experts to identify and comprehend the essential omnichannel retail mix elements that impact omnichannel purchase decisions. Subsequently, the quantitative phase employed surveys to examine the integration levels,

connectivity, and consistency scores, additionally analyzing the relationships between the defined essential omnichannel retail mix elements and customers' purchase intention.

Findings:

The study revealed that the degree of integration, specifically measured by connectivity and consistency, played a critical role in influencing customers' purchase intention. Connectivity was identified as having a higher impact than consistency. Varying levels of integration among retailers in the Vietnam market were discovered, emphasizing the need for tailored omnichannel strategies. Furthermore, five out of ten examined retail mix elements exhibited a significant positive impact on purchase intention including product uniqueness, product information, price transparency, personalization service, and post-purchase support.

Value:

This research provided valuable insights and practical guidance for retailers aiming to accelerate the omnichannel strategy in Vietnam's beauty care sector. The confirmed impact of integration levels through connectivity and consistency as well as the identified significant retail mix elements offered retailers guidance to create a measurable impact on customers' purchase intention. The finding lists and implications served as a valuable framework for retailers in prioritizing areas for improvements. The study's findings contributed to the broader academic understanding of omnichannel retailing and emphasized the importance of strategic omnichannel integration investment and a customer-centric approach. Additionally, the research suggested recommendations for future explorations, providing a foundation for further studies in the dynamic landscape of omnichannel retailing, especially in the context of emerging markets such as Vietnam.

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CHAPTER I:

INTRODUCTION

1.1. Introduction

The retail environment substantially changed in recent years because of technological improvements and shifting customer behaviors. The rise of omnichannel retailing completely changed how customers engaged with retail channels, retailers, and brands and made purchase decisions. In order to give customers a consistent and tailored purchasing experience, omnichannel retailing referred to the seamless integration of numerous channels, including physical stores, internet platforms, mobile apps, and social media (Rigby, 2011).

With a youthful, tech-savvy population and a fast-growing economy, Vietnam saw a significant change in consumer purchasing behaviors (McKinsey, 2023). In Vietnam, there was fierce competition in the consumer goods industry, which included a wide range of commodities such as food and drinks, beauty and personal care products, etc. Retailers in the consumer products industry implemented an omnichannel retailing strategy to engage with customers throughout their purchase decision journey because consumers became more connected and always wanted convenience. According to a study by Deloitte Vietnam, there were a number of disruptive retail trends in Vietnam that offered chances for retailers to innovate and create diverse business plans (Deloitte, 2022).

The use of omnichannel retail systems was proven to bring many benefits to businesses such as "expanding the scale of operations through increasing the scope of service experiences for customers, enhancing reputation, optimizing profit maximization" (Stone et al., 2002). At the same time, it also brought many risks if businesses did not

ensure the level of information integration and service synchronization across channels. For example, many retail stores did not regularly update information about new products, prices, and promotional policies on their websites, creating a lot of inconvenience for customers when they did not have accurate information to help customers make decisions, even causing negative emotions for customers when they had to change their choice due to outdated information. Therefore, it not only affected business on traditional channels but also made additional investment costs for electronic channels wasteful (Seck & Philippe, 2013). Therefore, to manage service quality, omnichannel retail businesses needed to improve service capacity at most of the touchpoints at brick-and-mortar stores, combined with increasing customer experiences effectively on online channels, in addition to constantly improving the ability to integrate information and synchronize services across traditional and electronic channels.

There was a lack of thorough research examining the effects of omnichannel retailing on customers' purchase decision journeys so far, despite the rising significance of this practice in Vietnam's consumer goods market as analyzed in Chapter 2. For researchers and practitioners, it was essential to understand comprehensively how omnichannel retailing affected customers' decision-making processes, firstly from the information search, evaluate the information, make the purchase decision to the post-purchase phase. Therefore, the purpose of this study was to examine how omnichannel retailing impacted Vietnamese customers' journeys toward making purchase decisions. A comprehensive knowledge of the complicated relationship between omnichannel retailing and customer behaviors would be achieved by using a mixed-method approach that combined qualitative and quantitative phases.

It was anticipated that the results of this investigation would advance both academic and practical practices. Academically, this study would close a gap in the

literature by offering empirical evidence of how omnichannel retailing affected customers' purchase intentions. The practical implications of this study's findings could support retailers in developing successful omnichannel strategies to enhance customer engagement, increase customer satisfaction, and ultimately strengthen the competitive advantages to drive the business forward.

1.2. Omnichannel in Vietnam

In the global context and specifically within Vietnam, the concept of a multi-channel business model became well-established. Most businesses recognized the potential of reaching customers by developing their websites, mobile applications, or social commerce pages. The widespread adoption of these digital channels indicated a shift towards more versatile and accessible modes of commerce beyond traditional brick-and-mortar stores. However, despite establishing online distribution channels alongside traditional physical stores, businesses had not adequately assessed customers' feedback regarding this expansion. As a result, the substantial investments made in building mobile applications and commercial websites sometimes fail to translate into improved customer perceptions of service quality. In some cases, these efforts might even backfire, leading to a diminished image and reputation for the business in the eyes of customers. This issue arose because most businesses lacked a data-driven approach for developing criteria to evaluate the customers' perception in this modern business format.

Many companies rushed to implement these online channels, mostly driven by the fear of missing out on the rapidly growing e-commerce market. Yet, without proper research and understanding of customer expectations and experiences, these efforts could bring more harm than benefits. Customers were more discerning and had high

expectations for both online and offline shopping experiences. They expected seamless integration, consistent service quality, and a user-friendly interface across all platforms.

Moreover, the shift to online channels required a significant investment in technology, training, and marketing. Businesses had to ensure that their frontline staff were equipped to handle online inquiries and transactions efficiently. They also needed to invest in robust cybersecurity measures to protect customer data, which was paramount in maintaining trust and loyalty. Failure to do so could lead to data breaches, which could severely damage a company's reputation and result in legal consequences.

In recent years, the evolution of business models among specialized retail chains has becoming more exciting than ever in Vietnam. The specialized retail chains were named Thegioididong, Dienmayxanh, dienmaycholon, Nguyen Kim, FPT Retail, Digiworld… in electronics; Blue Exchange, Anphuoc, Elise, Canifa, IvyModa, Adam Store, Levents, Charles and Keith… in fashion; PNJ, Doji, etc. in jewelry; Concung, Bibomart, Kids Plaza, Ava Kids, etc. in mom and baby; Bachhoaxanh, Go!, Winmart, Lotte mart, Aeon, Coopmart, etc., in grocery; and Guardian, Hasaki, Watsons, Beauty Box, thegioiskinfood, etc. in beauty.

During the 2019-2021 period, the world and Vietnam retail industries were fundamentally affected by Covid - 19 pandemic, while traditional offline sales channels suffered a large decline in sales due to travel restrictions and severe lockdowns. Mainly, online sales channels were growing rapidly in most countries (according to the 2020 report of WTO, in China, in the first quarter of 2020 sales of essential products on Online channels increased from 50% - 150% compared to the previous year; in the United States, online sales were up 14.5% accordingly). In Vietnam, according to a report by Deloitte Vietnam, more than 50% of Vietnamese consumers reduced the frequency of going to supermarkets, grocery stores, and food markets, while 25% of them increased their

shopping online. Therefore, the transition towards multi-channel retail was accelerating rapidly, as evidenced by the significant e-commerce growth of up to 18% in 2020. However, this rapid development brought numerous challenges for multi-channel retail businesses. Key issues included inventory shortages and supply chain disruptions, leading to delays in delivery and order processing setbacks. These logistical challenges significantly impacted customer satisfaction and trust, causing many customers to hesitate to shop online. Furthermore, integrating online and offline sales channels required seamless integration and robust IT infrastructure, which could strain business resources. Consequently, businesses had to address these challenges to successfully capitalize on the potential of multi-channel retailing.

According to the Vietnam General Statistics Office, in 2022, total retail sales of consumer goods and services were estimated to reach approximately US$ 242 million, an increase of 19.8% compared to 2021 and 15% higher than 2019 before Covid-19. The general recovery of the economy spurred the retail industry to grow again. A survey of 15,000 retailers by the sales and management platform showed that although 42% of retailers recorded a decrease in revenue compared to 2021, the overall situation in 2022 was a recovery in revenue (Hoang, 2023). The percentage of retailers with revenue growth accounted for 37.72%, higher than in 2021 (23.88%) and 2020 (30.7%). The number of retailers with revenue growth of over 30% accounted for 6.36% (Hoang, 2023).

To achieve better business results, retailers used different approaches to stimulate purchasing power, push inventory, and create better business advantages. Of these, 65.58% of retailers created promotional programs with discounts, gifts, and free products; 22.64% of retailers applied for point accumulation programs when making purchases and exchanging gifts for loyal customers; 10.69% of retailers used post-sales customer care

methods such as sending birthday messages and updating promotional information. Only 1.09% of retailers did not have a specific plan to boost revenue.

Retailers were not willing to spend too much on marketing activities, most marketing budgets accounted for less than 10% of revenue (58.3%), and the percentage of retailers spending budget on marketing accounted for 10-20% of revenue. The percentage of retailers spending 10-20% of their revenue on marketing was only 9.3%. The three most popular marketing channels in the retail industry and spending a lot of money were: advertising on social networks, in-store marketing, and advertising on e-commerce platforms.

The year 2022 recorded the outstanding development of Celebrity/Influencer (KOL)/Key Consumer (KOC) marketing channels, with diverse and creative forms with increasing quality. The percentage of retailers using this channel accounted for 7.37%. At the same time, this channel also surpassed the Advertising channel on e-commerce platforms, reaching the top three most effective marketing channels (after In-store Marketing and Social Network Advertising).

Multi-channel selling became a trend in retail businesses in Vietnam. A report by TMX - a business transformation consulting company in the Asia-Pacific region showed that 68% of Vietnamese business leaders and 40% of leaders in the entire region in general investing in a multi-channel strategy to build a foundation for future growth. On the other hand, 76% of Vietnam (46% of the entire region) also considered investing in the multi-channel sales model a top priority in the next 3 to 5 years.

Deloitte Vietnam's report also pointed out a prominent trend in the retail industry: the rapid development of the multi-channel model after the COVID-19 pandemic. At the time of the report, most Vietnamese consumers in urban areas were accustomed to consuming on multiple channels: brick-and-mortar shops, brand websites, marketplace

platforms, social platforms, and ride-hailing platforms after considering various factors such as delivery time, price, promotions, and incentives, etc.

On the other hand, multi-channel retailers showed an advantage in revenue compared to retailers who only sell directly in physical stores or online. Multi-channel retailers recorded revenue growth of 68.01%, while this rate for online retailers was 16.9% and for those who only sold in physical stores was 15.07%.

Among online sales channels, e-commerce was the most popular with 49.69% of retailers using it, followed by social network Facebook (39.13%), and websites (9.94%). %). TikTok Shop - a new sales channel appearing in 2022 currently only accounted for 1.24% of the proportion but was a trend of exploitation and transformation by retailers. Among retailers who only did business entirely online, the highest percentage of revenue growth compared to 2021 came from e-commerce platforms (43.75%). Meanwhile, most retailers on Facebook (social network) said they recorded a decline in revenue of 10-30%.

However, when evaluating the overall effectiveness of sales channels, the in-store channel was still the most popular (scoring 7.2/10 points). Ranked 2nd was the social network channel with 6.9 points, the e-commerce platform with 6.67 points, and the website with 5.76 points. In the accommodation and food service industry, the in-store sales channel was also rated highest with 8.83/10 points, the social network channel reached 6.2 points, the online food ordering application channel reached 5.8 points, website channel only scored 5.1 points. However, the most preferred online sales channel was ride-hailing platforms such as Grabfood, Shopee Food, Baemin, Gojek, Loship, etc. accounting for 55.6%.

1.3. Research Problem

The retail industry was undergoing a significant transformation driven by advancements in technology and changing consumer behaviors. One of the key challenges faced by retailers was how to effectively manage and integrate multiple distribution channels to meet the evolving demands of consumers. The emergence of multichannel, cross-channel, and omnichannel retailing added complexity to the traditional retail landscape. Each of these models offered different levels of channel integration and synchronization, affecting customer experiences and business operations.

In addition, omnichannel was widely accepted and believed to be the right approach for retailers (Rusanen, 2019). However, in Vietnam or similar emerging markets, there was no clear evidence from the customers' point-of-view about how omnichannel could impact their purchase intention (Verhoef, 2021; Verhoef et al., 2015). If this question could be answered, retailers could be more confident in investing in an omnichannel retailing strategy. If omnichannel did impact customers' purchase intention, the author intended to delve into exploring what omnichannel retail mix elements impact more on the purchase intention than others.

1.4. Purpose of Research

To fill the research problems, the research would aim at the following research objectives:

- To evaluate the impact of integration levels in omnichannel retailing on customers' purchase intention.
- To assess the impact of omnichannel retail mix elements on customers' purchase intention.

- To provide recommendations to retailers on how to create a larger impact on purchase intentions through understanding significant omnichannel retail mix elements.

The first objective of this research delved into the level of integration in omnichannel retailing and its direct correlation with customers' purchase intentions in the beauty care sector of Vietnam. Through in-depth analysis of integration levels across two dimensions including Consistency and Connectivity, this study aimed to detect how the seamless integration of these channels influenced customer's purchase intention. By quantifying the degree of integration through connectivity or consistency and its impact, this objective sought to offer valuable insights into the effectiveness of an integrated omnichannel strategy and its ability to enhance customers' purchase intentions.

Secondly, this research aimed to comprehensively assess the influenced of various omnichannel retail mix elements on customers' purchase intentions within the beauty care category in Vietnam. Through rigorous data analysis and customer surveys, this study would explore what retail mix elements were important in developing an omnichannel strategy in Vietnam and how they affect consumers' intentions to make a purchase.

The final objective of this dissertation aimed to provided practical recommendations to retailers operating in the beauty care category in Vietnam, with a focused on how they could leverage significant omnichannel retail mix elements to create a more substantial impact on customers' purchase intentions. Drawing from the findings of the previous objectives, this section of the research would offer actionable insights and strategic guidance to businesses seeking to optimize their omnichannel strategies. By understanding which elements hold the most important over customers' purchase decisions, retailers could tailor their approaches, allocate resources effectively, and foster

stronger connections with their target audience, leading to increased purchase intentions and overall business success.

Overall, by achieving these research objectives, the study aimed to contribute to the existing knowledge on the impact of omnichannel retailing on the customer decision-making journey.

1.5. Significance of the Study

This study held considerable significance within the broader field of omnichannel retailing. The significance of this study was vital within the context of modern retailing, particularly in the dynamic and highly competitive consumer goods sector, with a specific focused on the beauty care category in Vietnam. By systematically examining the impact of omnichannel retail mix elements and integration levels on customers' purchase intentions, this research advanced understanding of how these strategies influenced consumer behavior. The findings would not only provide empirical evidence but also contribute to the theoretical underpinnings of omnichannel retailing, offering valuable insights that could be applied by retailers not only in Vietnam but also in similar emerging markets and across various industries.

Beyond academic contributions, this study offered tangible benefits to retailers operating in the beauty care sector in Vietnam. The recommendations derived from the research findings would serve as a practical guide for businesses looking to modify their omnichannel strategies. In an era where customer experience and satisfaction were important, retailers could use these insights to make informed decisions regarding resource allocation, marketing initiatives, and technology investments. Understanding which omnichannel retail mix elements had the most significant impact on purchase intentions enabled retailers to optimize their efforts, enhance customer engagement, and

ultimately drive sales growth. This practical applicability made the research outcomes directly relevant to industry practitioners and provided them with actionable strategies for achieving a competitive advantage.

The study's implications extended beyond the retail sector to encompass broader economic and societal dimensions. As the beauty care category was a contributor to Vietnam's economy, any improvements in the sector's retailing practices could have a positive effect on economic growth, job creation, and overall prosperity. Moreover, by promoting more efficient and customer-centric retail operations, this research indirectly benefited consumers by enhancing their shopping experiences. A better understanding of omnichannel retailing in this context could lead to more tailored and personalized interactions, improved access to products, and potentially cost savings for customers.

The area of this research study was an intersection encompassing the Consumer's Decision Journey, specifically focusing on Purchase Intention, within the context of Fast-Moving Consumer Goods (FMCG) in the Beauty Care sector of Vietnam, as influenced and reshaped by the dynamic landscape of Omnichannel Retailing. The intersection of these three dimensions was where the research focused on. The study aimed to contribute both theoretical and practical insights to this dynamic area, offering valuable guidance for retailers, marketers, and stakeholders operating within this unique space.

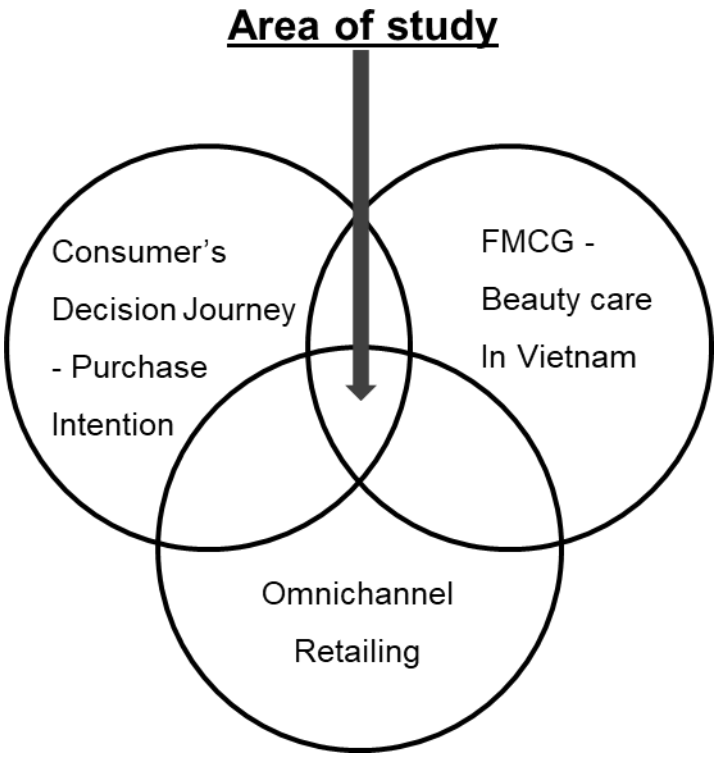


Figure 1. Area of Study. Source: Author's complication.

Regarding the new academic and theoretical contributions, firstly, the thesis affirmed and deepened the theoretical basis of omnichannel retail by exploring the intricate dynamics of customer interactions and engagement across multiple retail channels. This comprehensive analysis extended beyond traditional retail theories, integrating concepts of digital transformation and consumer behavior in a seamless omnichannel environment. The research underscored the critical importance of maintaining a unified customer experience across both online and offline channels, thus providing a robust theoretical foundation for future studies in omnichannel retailing and consumer purchase intentions.

Secondly, the thesis was meticulously compiled and built to supplement and contribute to the body of scientific knowledge on purchase intention within a multi-

channel retail environment. It provided a detailed examination of the various factors influencing purchase intentions and introduced innovative methodologies for measuring omnichannel integration through connectivity and consistency scores. By elucidating the complex interplay between these factors and their impact on purchase intentions, the thesis offered a nuanced understanding of how seamless integration across channels could drive consumer behavior and enhance overall retail performance.

Thirdly, the thesis conducted extensive surveys and evaluations to assess the influence of critical retail mix elements in a multi-channel retail context on customer satisfaction and loyalty. This empirical investigation highlighted the significant role of elements such as product uniqueness, detailed product information, and transparent pricing in shaping consumer perceptions and fostering brand loyalty. The findings emphasized the necessity for retailers to strategically manage these elements to optimize customer satisfaction and loyalty, thereby reinforcing the practical implications of the theoretical insights gained from the study.

Next, the thesis discovered and formulated new analyzing framework for omnichannel in Vietnam based on the comprehensive analysis of research and survey results from 500 customers who engaged with omnichannel retail services in the beauty care category in Vietnam. Utilizing advanced statistical techniques such as the Cronbach Alpha Reliability scale tester, correlation analysis, and linear regression, the research provided empirical evidence on the effectiveness of various omnichannel strategies. This framework offered actionable insights for retailers to enhance their omnichannel practices, ensuring they met customer expectations and drive sustained business growth. The rigorous methodological approach and the extensive dataset established the robustness and reliability of these findings, making a substantial contribution to the field of omnichannel retailing.

Finally, based on the research results and a thorough analysis of limitations and causes, the thesis proposed a series of strategic solutions aimed at helping retailers within the industry, and in Vietnam more broadly, to enhance the quality of their omnichannel sales services. It was essential for retailers to develop a comprehensive channel-based retail strategy. This involved creating a cohesive plan that integrated all sales channels—online, offline, mobile, and any other touchpoints—into a unified system that provided a seamless shopping experience for customers. By doing so, retailers could ensure that customers receive consistent service and product availability regardless of the channel they choose to use.

1.6. Research Purpose and Questions

This dissertation sought to investigate the relationship between omnichannel retailing and customers' purchase intention within the beauty care category in Vietnam. To achieve this aim, the following research questions were pointed out:

How does omnichannel retailing impact customers' purchase intention in the beauty care category in Vietnam?

This research question addressed the central theme of how omnichannel retailing influenced consumers' intention to make purchases in the beauty care sector. It included the broader impact of omnichannel strategies on purchase intentions, encompassing both the positive and negative aspects of this relationship.

To delved deeper into the aspects of omnichannel retailing's influenced on purchase intention and to meet the specific objectives outlined in this research, the following sub-question was formulated:

What are the significant elements of the omnichannel retailing that influenced customers' purchase intention in the beauty care category in Vietnam?

This sub-question aligned with the research objectives, aiming to identify the key components of the omnichannel retail mix that played a significant role in shaping customer purchase intentions. Omnichannel retail mix elements would be explored in details.

These research questions collectively formed the foundation of this dissertation, guiding the empirical investigation and analysis of the impact of omnichannel retailing in the context of the beauty care sector in Vietnam. Through rigorous exploration and analysis, this study aimed to contribute valuable insights to both academic scholarship and practical retailing strategies in an ever-evolving omnichannel retail landscape.

1.7. Thesis outline

The data presentation was accompanied by the study report's format. A linear-analytic methodology that "logically reflected the research process" would be used in the research report (Saunders et al., 2016). A fundamental report structure was presented by Saunders et al. (2016) and included the following sections: Abstract, Introduction, Method, Findings/Results, Discussion, Conclusions, References, Appendices, and Recommendations. This research report would adhere to the report structure recommended by Saunders et al. (2016). The thesis was set up to investigated in detail how omnichannel retailing affected customers' decision-making process when making purchases in Vietnam's consumer goods industry. The following outlined would be followed by the thesis:

- Chapter 1: Introduction
    - The introductory chapter set the stage for the research by presenting the background, context, and significance of the study. It outlined the research problem, objectives, research questions,

and hypotheses. Additionally, it provided an overview of the scope and limitations of the study, as well as the methodology employed. This chapter aimed to give readers a clear understanding of the research's purpose and relevance.

- Chapter 2: Review of Literature
    - In this chapter, a comprehensive review of existing literature related to omnichannel retailing, customer purchase intentions, and the beauty care industry was presented. The literature review covered theoretical frameworks, key concepts, and previous research findings. It identified gaps in the current body of knowledge that this thesis aimed to address. This chapter laid the foundation for the theoretical and conceptual framework of the study.
- Chapter 3: Methodology
    - This chapter detailed the research design and methodology used to conduct the study. It described the mixed-methods approach, including both qualitative and quantitative methods, and provided a rationale for their selection. The chapter elaborated on the sampling techniques, data collection instruments, and procedures used in the expert interviewed and customer surveys. Additionally, it explained the data analysis techniques employed to interpret the findings.
- Chapter 4: Results
    - The results chapter presented the findings from the qualitative and quantitative phases of the research. It included detailed analysis of

the data collected from expert interviews and customer surveys. Key findings related to omnichannel integration, retail mix elements, and their impact on purchase intentions were discussed. The chapter also highlighted the statistical significance of various factors and their interrelationships.

- Chapter 5: Discussion
    - In this chapter, the research findings were interpreted and discussed in the context of existing literature and theoretical frameworks. It provided a critical analysis of the results, exploring the implications for retailers and the broader beauty care industry in Vietnam. The discussion highlighted the practical and theoretical contributions of the study, linking the findings back to the research questions and hypotheses.
- Chapter 6: Summary, Implications, and Recommendations
    - The final chapter summarized the key findings and conclusions of the research. It discussed the practical implications for retailers, offering strategic recommendations to enhance their omnichannel retailing efforts. The chapter also outlined the theoretical contributions of the study and suggested directions for future research. This concluding chapter aimed to provide a comprehensive overview of the study's contributions and potential impact on the industry.

This structured outline ensured that the thesis systematically addressed the research problem, provided a thorough analysis of the findings, and offered valuable

insights and recommendations for both practitioners and scholars in the field of omnichannel retailing.

CHAPTER II:

REVIEW OF LITERATURE

This literature review aimed to explore and synthesize existing research and industry insights to provide a comprehensive understanding of the concept of omnichannel retailing. A comprehensive search of academic databases, industry reports, and relevant publications would be conducted. The selected sources would be critically analyzed and synthesized to provide a holistic view of the current state of research on omnichannel. The literature review examined many research sources, from systematic review to omnichannel research in a specific industry and region. There were many different points from each type of literature review source. In this part, the literature review relating to the topic "Omnichannel retailing" and "Omnichannel impact on customer decision journey" were discussed. A systematic review, omnichannel research globally, and omnichannel research in Vietnam were explored.

2.1. Overview of Omnichannel Retailing

Since 2011, Rigby (2011) defined the term "omnichannel" as "an integrated sales experience that melds the advantages of physical stores with the information-rich experience of online shopping". The last attempt to define the term was by Levy et al. (2014), who introduced "omnichannel retailing" as "a coordinated multi-channel offering that provided a seamless experience when using all of the retailer's shopping channels". According to Keenan (2023), omnichannel removed the boundaries between different sales and marketing channels to create an united and integrated one. The difference in retail in-store systems, among online channels, social networks, smart phones, emails and messages would disappear when businesses had a single view of customers and bring a seamless purchasing experience for customers. Carroll & Guzmán (2013) argued that

omnichannel was generally understood as an orientation that provided a single, seamless, unified experience for all customers across all channels. Saghiri et al. (2017) described omnichannel as a complex adaptive system consisting of entities, connections, urgency, and automatic control.

In omnichannel retailing, customers were placed at the center of access through sales channels, maximizing customer experiences from offline to online channels and vice versus, only on a single system of management. All sales channels were synchronized with each other by integrated information management systems. Correspondingly, omnichannel overcame the limitations of multichannel (Verhoef et al., 2015).

Omnichannel retailing underwent a significant evolution over the past decade, driven by advances in technology, changing consumer behaviors and preferences, increased competition among retailers, and most recently the global covid pandemic. According to Lazaris & Vrechopoulos (2014), here were some of the key stages in the evolution of omnichannel retailing:

- Traditional Retail: Before the rise of e-commerce, retailing was primarily done through brick-and-mortar stores, with customers visiting physical locations to make purchases.
- Early e-commerce: With the emergence of the Internet, retailers began to offer online shopping options through online websites, enabling customers to make purchases from their computers.
- Multichannel Retailing: As retailers expanded their digital offerings, they began to offer multiple channels for customers to shop, such as in-store, online, and mobile apps.

- Seamless Integration: To provide a more seamless shopping experience, retailers began to integrate their various channels, using data and technology to provide a consistent experience across all touchpoints.

Numerous research papers on multichannel retailing, utilizing multiple distribution channels within the same sales activity, were published since the early 2000s when the advent of the internet significantly accelerated the growth of e-commerce businesses. However, it wasn't until around 2015 that authors began to clearly differentiate these business models as multichannel, cross-channel, or omnichannel. The key basis for classification laid in the degree of integration and synchronization of information and services across all channels. Nevertheless, in many cases, these terms were still used interchangeably (Beck & Rygl, 2015). In this research, the term "omnichannel retailing" was used broadly to encompass various forms of retailing that involved a combination of traditional and electronic channels, with synchronized information and service integration across both channels, allowing customers to have a relatively seamless shopping experience across different levels.

There was a common voice in much systematic research about omnichannel. They agreed upon the most important stage of omnichannel evolution, which was from multi-channel to omnichannel (Lazaris & Vrechopoulos, 2014; Manser Payne et al., 2017; Verhoef et al., 2015). According to Keenan (2023), multichannel uses of both showrooms to displayed goods, a system of retail stores and websites with e-commerce functions was expected by retail businesses to be an effective solution to not miss any purchase’s decisions. When applying multichannel retailing, several problems arose for customers and businesses. For customers, without a synchronous connection among distribution channels, each channel still operated independently, and this might bring certain disruptions to customers. For businesses, applying multichannel retailing tended to create

conflicts of interest between offline and online channels due to the way businesses evaluated the performance of distribution channels based on sales of each individual channel.

Integration was the key criteria to decide how much "omnichannel" a retailer was. Research on multichannel retailing consistently emphasized the importance of integration among distribution channels. Therefore, the varying degrees of integration between distribution channels would determine the form of multichannel retail services. Specifically:

- Multichannel retailing was the practice of businesses simultaneously developing two or more distribution channels (Berman, 1996; Pelton et al., 2002). In the research conducted by Beck & Rygl (2015), multichannel retailing was described as a set of activities related to selling goods and services through more than one distribution channel. However, in this form of retail, support for customer interaction and the management of interactions between channels and retailers were limited.
- Cross-channel retailing was an extension of multichannel retailing. Cross-channel retailing involved synchronizing some services and information across distribution channels. As a result, the customer experience in cross-channel retailing was higher than that in multichannel retailing, although it was not yet fully seamless (Beck & Rygl, 2015).
- Omnichannel retailing represented the highest level of business development in this regard. In omnichannel retailing, businesses integrated all distribution channels (both traditional and electronic) into a unified entity, creating a seamless shopping experience regardless of the channel the customer uses (Herhausen et al., 2015). Therefore, a multichannel

retail strategy enabled businesses to combine the advantages of traditional brick-and-mortar stores with the superior information capabilities of online channels.

2.2. Research on Omnichannel Retailing

This part would delve into the current research landscape in the topic of "omnichannel" and "omnichannel retailing". Systematic review papers were trustful and rich in information about the topics. In this topic of omnichannel, there seemed to be a common voice within systematic review papers. Then, research specific in only omnichannel operations and omnichannel in Vietnam would be presented.

2.2.1. Systematic review

The systematic literature review research often provided a comprehensive view of a research topic. The omnichannel research topics were mentioned much in the literature review research. The synchronization of those papers could help define the research direction. Overall, omnichannel received the same definition in various researches, which was the seamless integration of many channels at the same time in supporting customers (Bernon et al., 2016; Hsia et al., 2020; Lazaris & Vrechopoulos, 2014; Lynch & Barnes, 2020; Mosquera et al., 2017; Peltola et al., 2015; Simone & Sabbadin, 2017; Verhoef, 2021; Verhoef et al., 2015).

Systematic research often mentioned the challenged, opportunities, and benefits of omnichannel. Verhoef et al. (2015) and Verhoef (2021) listed the key benefits of omnichannel as follow:

- Enhanced customer experience, with customers able to access products and services through a variety of channels and receive consistent messaging and branding.

- Improved customer loyalty and retention, with customers more likely to return to retailers who provided a seamless and personalized shopping experience.
- Increased sales and revenue, as customers were more likely to purchase from retailers who offered a variety of channels and a convenient shopping experience.
- Customers who used multiple channels during their purchase journey had higher satisfaction levels and were more loyal to the retailer than those who used a single channel.

The challenge of omnichannel remained in the integration, which was the main difference between multichannel and omnichannel in terms of definition (Lazaris & Vrechopoulos, 2014; Mosquera et al., 2017; Simone & Sabbadin, 2017; Verhoef, 2021; Verhoef et al., 2015). In other words, a company could be called using an omnichannel instead of a multichannel depending on the integration level in their operations. Other challenges lie in the operation of the integration, such as data privacy, data management, data analytics, service operations, etc.

The most important thing from systematic research was that they often call for future research on omnichannel the view of the customer's perspective (Verhoef, 2021; Verhoef et al., 2015), which was the motivation for this thesis.

2.2.2. Omnichannel research

A literature review for research in omnichannel in general was also conducted to understand how people studied the omnichannel topic. Overall, researchers often focused on how companies should develop their omnichannel by identifying key factors for a successful omnichannel (Flavian et al., 2021; Lynch & Barnes, 2020; Mofokeng, 2021; Peltola et al., 2015; Tueanrat et al., 2021) and the impact of omnichannel on some aspects

of company's operations (Bernon et al., 2016; Hosseini et al., 2018; Huang & Jin, 2020) and customer experience (Hsia et al., 2020).

Many key factors were critical to developing an effective omnichannel customer experience including:

- Integration of channels (Hsia et al., 2020; Peltola et al., 2015): The integration of online and offline channels was critical to providing a seamless customer experience. Retailers needed to ensure that all channels were integrated and work together seamlessly to provide a consistent experience.
- Customer data and insights (Peltola et al., 2015): Retailers needed to collect and analyze customer data to gain insights into customer behavior and preferences. This data could be used to personalize the customer experience and provide targeted marketing messages.
- Customer service (Peltola et al., 2015): Customer service was critical to the success of an omnichannel customer experience. Retailers needed to provide high-quality customer service across all channels and ensure that customers had access to support whenever they needed it.
- Fulfilment and delivery (Peltola et al., 2015): Retailers needed to ensure that they had an efficient and effective system for fulfilling and delivering orders. This included offering multiple delivery options and providing accurate information about delivery times.
- Mobile technology (Peltola et al., 2015): Mobile technology was becoming increasingly important for providing an effective omnichannel customer experience. Retailers needed to ensure that their websites and

mobile apps were optimized for mobile devices and provided a seamless experience across all channels.

- Some research examined the impact of omnichannel on some aspects of a company's operations. For example, Bernon et al. (2016) studied the impact of omnichannel on the supply chain while Hosseini et al. (2018) provided a mathematical framework to evaluate the benefits and costs of the omnichannel in terms of strategy.

Research often perceived that companies had already conducted omnichannel and then they decided to evaluate how smaller factors affect the effectiveness of the omnichannel. Research agreed that omnichannel eventually brought benefits to retailers (Abdelmaged, 2021). In terms of customer purchase decision making or purchase intention process, research often assumed that participants were already in the context of omnichannel. For example, Lynch & Barnes (2020) investigated the customer purchase decision making journey in the context of omnichannel fashion retailing. Their framework included three stages in the customer decision-making journey: pre-purchase, purchase, and post-purchase. They then examined the customer journey across these stages and explored how retailers could optimize the omnichannel experience for customers. Similarly, Abdelmaged (2021) investigated the impact of omnichannel retailing on consumers' buying intentions. The author used binary models to examine the relationship between various factors, including product quality, brand image, socioeconomic status, social impact, omnichannel experience, and consumers' buying intentions in the context of omnichannel retailing. In other words, they did not separate the impact of omnichannel and non-omnichannel context on the customer journey or purchase intention journey.

In their omnichannel research, Gasparin et al. (2022) took a different method. They thought that the assumption made by most omnichannel literatures that businesses should integrate touchpoints across channels to generate seamless experiences was incorrect. This article questioned this presumption by examining how customer experience in multichannel shopping was impacted by perceived journey integration. They did not believe that the organization had already implemented omnichannel, contrary to earlier study. They used a different strategy since they considered omnichannel to be a factor in examining how it affected the consumer experience. Instead of focusing on how the consumer choice journey functions within the framework of omnichannel, this thesis might go in this way by using omnichannel as a factor to examine how omnichannel could affect the customer decision journey. Following the approach of Gasperin et al. (2022) and the agreement that omnichannel was associated with integration, this research would measure omnichannel through integration (with consistency and connectivity as in Gasperin et al. (2022)).

2.2.3. Omnichannel Research in Vietnam

In Vietnam, retail businesses also understood the desire of customers to enhance a seamless and consistent experience. Therefore, Vietnam retail businesses began to pay attention and tended to switch from the multichannel retailing model to the omnichannel retailing model over the past ten years. There were some advantages for Vietnam retailers when making this transition:

- Vietnam's retail market had a high growth rate. According to a report from the Ministry of Industry and Trade, Vietnam's retail industry had a scale of 142 billion USD and was forecasted to increase to 350 billion USD by 2025, contributing up to 59% of GDP (Ngoc Quynh, 2023).

- The information technology infrastructure system in Vietnam was developing very quickly along with the number of internet users, bringing convenience for retail businesses to deploy the omnichannel retailing model (P. T. Nguyen, 2022; Thu Huong, 2022).
- The financial industry contributed to the development of omnichannel retailing through a variety of payment services via the Internet and mobile phones. Specifically, by 2020, there were 78 organizations providing internet payment services and 45 organizations providing mobile payment services, with the number of transactions reaching several hundred million billion VND (T. T. Le, 2020).

Research about omnichannel in Vietnam also gained some significant empirical results since the Covid-19 pandemic. The pandemic accelerated the shift to omnichannel retailing, especially the online aspects of retailers to support and distribute their products. Research about omnichannel in Vietnam was often conducted in Ho Chi Minh City, where was the most crowded and busiest city for businesses in Vietnam (Alang & Nguyen, 2022; A. N. H. Le & Nguyen-Le, 2021). Like the other research globally, Vietnam researched about omnichannel still focused much on what contributed to a successful omnichannel retailing. For example, A. N. H. Le & Nguyen-Le (2021) proposed a conceptual model that identified three key components of omnichannel customer experiences: channel service configuration, integrated interactions, and customer empowerment; Truong (2021) examined the drivers of omnichannel purchase intention in the fashion retailing sector in Danang; and Alang & Nguyen (2022) examined the factors that influenced omnichannel shoppers' perceived value and their shopping intention. Other authors deep dived into the interaction between customers and omnichannel. For instance, H. N. Nguyen & Nguyen (2022) examined the interactions

between omnichannel attributes, customer perceptions, customer experience, and channel selection; A. T. D. Nguyen & Hoang (2022) examined the effects of information technology competence (ITC) on business performance in the context of omnichannel retailing; Pham (2022) examined the factors that influenced consumers' perceptions of shopping effectiveness with omnichannel retailing. Khoa & Huynh (2023) approached the psychological aspects of customers when evaluating the impact of anxiety on the relationship between customers and omnichannel systems.

Those authors when researching omnichannel in Vietnam mentioned that some retailers to have already successfully conducted omnichannel systems in their sales and distribution systems. All research were conducted from the retailers or firms' perspectives so far. There was lacked research to answer the question of why retailers should apply omnichannel in Vietnam, and how to apply a successful omnichannel retailing model from customers' perspective globally, in other countries, and Vietnam.

However, there were also many challenges for businesses when converting from multi- channel to omnichannel retailing in Vietnam, such as:

- Vietnam currently lacked leading enterprises that could serve as role models for the implementation of omnichannel retailing. Well-known businesses that were mentioned a lot in the research such as The Gioi Di Dong, Con Cung, etc. also rarely shared how they worked.
- Vietnam's delivery service did not strongly and widely develop (Nguyen Q. T. & Huynh, 2021).

Overall, Vietnam also lacked researches relating to the customer's point of view. Moreover, they took the assumption that participating retailers had already implemented omnichannel rather than measure how "omnichannel" a retailer was before making interference. This research would close this gap by choosing on how to measure

"omnichannel" a retailer was then made appropriate analysis to examine the impact of omnichannel retailing to purchase intention.

2.3. Integration measurement

Until this point of the dissertation, the omnichannel was mainly mentioned with the integration levels within the retailers' channels. However, there was not a clear measurement to measure how "omnichannel" a retailer was. In other words, common sense in literature review showed that omnichannel was a good practice to follow but providing no measurement on the omnichannel degree.

The measurement of omnichannel integration represented a critical facet in understanding the effectiveness of retail strategies in seamlessly uniting various customer touchpoints. In this research, two key criteria, namely Consistency and Connectivity, served as pivotal metrics to gauge the integration level of omnichannel initiatives within the beauty care sector in Vietnam. Between the two measurements, consistency seemed to get an easier understanding in the literature review because much research mentioned this word, Consistency, in their paper, while Connectivity needed to be defined more.

This research would imitate the approach of Gasparin et al. (2022) in using integration degree as a way to measure the level of omnichannel implementation. Gasparin et al. (2022) measured the degree of integration through the eyes of customers. Their research result divided into two dimensions in the integration: connectivity of touchpoints and consistency of retail mix elements across touchpoints. Using this approach, the research expected to have four categories of companies: High connectivity + High consistency; High connectivity + Low consistency; Low connectivity + High consistency; and Low connectivity + Low consistency.

In research to measure the impact of omnichannel on customer experience, Gasparin et al. (2022) focused on one important aspect of omnichannel as a measurement to measure how omnichannel a company was, which was the integration levels. Integration was perceived by academy researchers to be the most important feature of omnichannel (Huang & Jin, 2020; Manser Payne et al., 2017; Mosquera et al., 2017; Peltola et al., 2015; Simone & Sabbadin, 2017; Verhoef, 2021; Verhoef et al., 2015). Mosquera et al. (2017) believed that retailing would evolve continuously to the state of total integration. Omnichannel would be achieved if total integration was achieved in the retailer's point of view and total interaction in the customer's point of view. Moreover, Abdelmaged (2021) stated that omnichannel integration in retail stores had significant positive impact on the buying intention and consumers were more likely to reuse an omni-channel service if the different channels were well-integrated (Gök, 2020). So, Consistency might be associated with "integration" (Lazaris & Vrechopoulos, 2014) stated that omnichannel retailing could also be challenging for retailers, as it required them to integrate their online and offline operations and to provide a consistent customer experience across all channels. Consistency could accompany with "brand consistency", "message consistency", or "information consistency" across many touchpoints (Manser Payne et al., 2017).

Consistency in omnichannel integration referred to the uniformity and coherence of the customer experience across diverse channels. It encompassed the alignment of messaging, branding, and overall customer interaction, ensuring a harmonized journey regardless of the touchpoint. Consistency was measured by assessing the extent to which a customer's experience, from online interactions to in-store visits, maintains a cohesive and seamless narrative. This criterion acknowledged the importance of delivering a unified brand message and experience, reinforcing customer trust and loyalty.

Connectivity, the second criterion in measuring omnichannel integration, delved into the seamless linkage and synergy between different channels. It assessed the ease with which customers could transition between online and offline touchpoints while maintaining a cohesive and uninterrupted experience. Connectivity was gauged by examining the fluidity of interactions, the integration of data and information, and the overall synergy between various channels. This criterion recognized the interconnected nature of modern retail, emphasizing the need for a well-integrated and interconnected ecosystem.

2.4. Omnichannel retail mix elements

The omnichannel retail mix represented a set of elements that retailers strategically manipulate to create a seamless and integrated shopping experience across various channels. This section comprehensively reviewed the key components of the omnichannel retail mix, shedding light on their significance in shaping consumer behaviors and purchase intentions within the beauty care sector in Vietnam. The significant retail mix elements in the context of omnichannel retailing was revealed through the qualitative phase of this research, which would be discussed later in Chapter 3. However, the following was the literature review of key retail mix elements found in the research process.

2.4.1. Product

In the context of omnichannel, product factor was not simply the physical product quality. Instead, product uniqueness, product information, and the accuracy of product information were important for omnichannel retailers. Product uniqueness emerged as an important aspect affecting customer behavior in the omnichannel world (Briedis et al., 2021). In the omnichannel world, providing consistent access to exclusive items across

several channels was critical for building a differentiated and engaging consumer experience (Amar et al., 2020).

The availability of extensive product information was critical to successful omnichannel retailing. Informed decision-making relied on customers having simple access to precise product information, such as ingredient lists and usage instructions, across several touchpoints (Thaichon et al., 2023). Piotrowicz & Cuthbertson (2014) showed that buyers expected seamless access to product details, reviews, and specs both online and offline. In an omnichannel environment, businesses had to make sure that product information was easily available, promoting transparency and improving the overall buying experience.

2.4.2. Price & promotion

Pricing strategies within the omnichannel retail mix played a pivotal role in influencing consumer perceptions and purchase decisions. The pricing and promotion elements within the omnichannel retail mix carried significant weight in influencing consumer behavior. Pricing and promotion impacted through four key features: promotion frequency, price transparency, payment options, and loyalty programs in the omnichannel context.

The frequency of promotions emerged as a crucial factor influencing consumer engagement and purchase decisions in the omnichannel landscape. A study published in the European Journal of Marketing found that customer satisfaction varies when presented with different types of omnichannel promotions (shopping goal-congruent vs shopping goal-incongruent and monetary vs non-monetary promotions) (Blom et al., 2021). Furthermore, promotions could encourage customers to transform from multi-channel shopping to omnichannel if promotions were conduct appropriately (Lee et al., 2021).

Price transparency, encompassing the clarity and openness in presenting pricing information across channels, was a key factor of successful omnichannel retailing. Consumers expected consistent and transparent pricing, allowing for informed decision-making regardless of the touchpoint. Customers often compared prices between channels. Price transparency could enhance customers experience and trust with the brand (Harsha et al., 2019).

Another relating to price and promotion was payment options in which customers could choose to pay their purchases in a convenient method to them. Payment was a critical phase in the shopping process, especially within the context of omnichannel retailing (Chen & Chi, 2021). The availability of diverse and flexible payment options was a key determinant of customer satisfaction in omnichannel retail. Offering a ranged of payment methods, including installment plans and online payment options, catered to the diverse preferences of modern consumers (Chen & Chi, 2021). Research by Ye et al. (2023) highlighted that the availability of flexible payment choices positively impacted customer loyalty and purchase frequency. In an omnichannel context, where customers navigated a myriad of channels, ensuring a seamless and varied payment experience contributed to an overall positive shopping journey.

Omnichannel loyalty programs were becoming increasingly important because they could provide a more seamless and rewarding experience for customers, leading to higher loyalty (Klede-Schnabel & Bug, 2016). Rewarding customers for their repeat business fostered a sense of loyalty and incentivizes continued interaction with the brand.

2.4.3. Service

The service dimension in the omnichannel retail mix extended beyond traditional customer service to encompass post-purchase support, personalized recommendations, and overall customer experience. Omnichannel retailers leveraged technology and data

integration to provide seamless service experiences, such as order tracking, personalized product recommendations, and efficient post-purchase support (Blom et al., 2021; Verhoef et al., 2015).

The enthusiasm exhibited by staff members across various touchpoints was a critical factor influencing customer re-purchase intention. Engaged and passionate employees created a great shopping environment, boosting consumer trust and improving the overall brand experience (Mittal et al., 2018). With the support of technology, personalization was a critical factor in successful omnichannel operations. Offering personalized recommendations, purchase suggestions, and support based on customer data enhanced the overall shopping experience. One common type of personalization was the suggested next-buying products based on the purchase history. Although there was concerns about privacy, a study conducted by (Wetzlinger et al, 2017) revealed that customers could still have the intention to adopt omnichannel even if they had privacy concerns in the context of online shopping.

Post-purchase support was critical in performing service excellence in any forms of retailing, not only in omnichannel context (Javed et al., 2020; Kumar & Anjaly, 2017). In omnichannel retailing, customers required a seamless experience holistically, post-purchase was a critical factor in making re-purchase intention. A satisfied post-purchase service could increase customer satisfaction, loyalty, and purchase intention (Salvietti et al., 2022).

In conclusion, a successful omnichannel retail strategy depended on a structured mix of product, price & promotion, and service elements. By prioritizing product uniqueness, accurate information, and consistent availability across channels, retailers could create a compelling product offering. Furthermore, employing successful promotion, transparent pricing, diverse payment options, and loyalty programs fostered a

positive customer perception. Finally, delivering exceptional service through staff enthusiasm, personalized recommendations, and post-purchase service ensured a satisfying experience, ultimately driving customer loyalty and repurchase intention.

2.5. Theoretical Framework

The theoretical framework for this research outlined the structure through which the complex dynamics of consumers' purchase decision journeys within Vietnam's beauty care sector, influenced by omnichannel retailing, were comprehensively examined. This framework integrated four key theoretical perspectives: the Theory of Reasoned Action (TRA), the Theory of Planned Behavior (TPB), and the Technology Acceptance Model (TAM).

Positioned at the core of the framework, the Consumer's Decision Journey served as the foundational stage-by-stage guide. It elucidated the steps from need recognition to post-purchase evaluation. This journey highlighted the evolving dynamics of consumer behavior as influenced by omnichannel retail mix elements, integration degrees, and technological facets within the beauty care sector in Vietnam.

Theory of Reasoned Action (TRA) focused on consumers' purchase intentions by examining their attitudes toward the omnichannel retail mix elements. This perspective explored the impact of integrated online and offline channels, personalized marketing strategies, product availability, and purchase process convenience on customer attitudes. It also emphasized the role of external influence in shaping these attitudes.

Theory of Planned Behavior (TPB) further enriched understanding by considering attitudes, subjective norms, and perceived behavioral control (PBC). TPB recognized the influenced of social norms and customers' perceived control over the purchase process in

shaping their intentions within the beauty care category in Vietnam's omnichannel environment.

Technology Acceptance Model (TAM) examined customers' acceptance and engagement with the technological aspects of omnichannel retailing. It assessed whether customers perceived these technologies as user-friendly (perceived ease of use, PEOU) and valuable (perceived usefulness, PU) in their purchase decision journeys. TAM helped to uncover how technological acceptance influenced customer attitudes and, subsequently, their intentions within the beauty care sector.

The integration of these four theoretical perspectives creates a comprehensive framework for investigating the relationships between technology, customer attitudes, social influenced, and practical feasibility as customers navigated the omnichannel retail landscape. This framework aimed to contribute to a deeper understanding of consumer behavior in the context of Vietnam beauty care market, benefiting retailers and businesses seeking to optimize their strategies in this evolving retail environment.

2.5.1. Concepts of Consumer Behavior

Consumer behavior was understood as a series of decisions regarding what to bought, why, when, how, where, how much, and how often, involving individual consumers or consumer groups over time in selecting products, services, ideas, or activities (Hoyer et al., 2012). Contemporary consumer behavior research extended beyond the aspects. It included businesses' exploration of whether consumers perceived the benefits of the products and services they purchased and how they experience and evaluate them. This, in turn, influenced subsequent consumer purchases and impacted how information about their products reached other consumers. Therefore, businesses had to understand the needs and factors influencing consumer shopping behavior. Kotler &

Armstrong (2023) outlined a system of factors leading to consumer purchasing decisions through the following model:

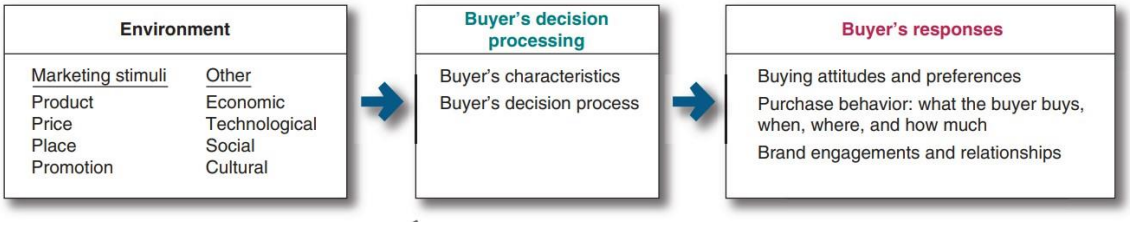


Figure 2. A model of Buyer Behavior. Source: Kotler & Armstrong (2023, p.163)

From this model, it was evident that marketing factors such as product, price, place, and culture influenced and enter the consumer's decision process alongside characteristics such as culture, society, personality, psychology, and the consumer decision-making process, which included identifying needs, seeking information, and evaluating options, leading to shopping decisions. Retailers had to comprehend what was happening in consumers' minds as external stimuli affected them and when they made purchasing decisions.

Over time, theories about consumer decision-making evolved. Initially, research focused on buying actions, but in the 1950s, modern marketing concepts were introduced into consumer decision research, encompassing a broader scope of activities (Engel et al., 1995). Modern research showed that many activities influenced consumer decisions, and several relevant models were developed.

From an economic perspective, it was assumed that individuals acted rationally and maximized their benefits in a clearly defined purchasing situation with distinct choices. Each choice had its utility and advantages. Any consumers could calculate which choice would maximize their benefits and made an appropriate selection. This perspective implied perfect competition in the market when consumers made rational decisions. However, there were limitations to the rational choice theory as it failed to

explain common irrational behaviors. Consumers might also make impulsive purchases influenced by advertising, family, and friends, as well as their emotions, mood, and circumstances.

In economic terms, it was true that consumers needed to be aware of all alternative product choices, accurately rank the pros and cons of each option, and ultimately make the best choice. However, it was evident that such expectations were not realistic. Consumers, in most cases, did not have access to "all information," lacked the time for such a complex process, and might not possess the skills or motivation to make a "perfect" decision. In general, consumers were willing to engage in decision-making activities if they were deemed satisfactory, not necessarily "optimal." Despite its limitations and debates, the rational choice theory significantly contributed to predicting consumer decisions.

According to Kotler & Armstrong (2023), consumer behavior was a process that enabled an individual or a group of people to select, purchase, use, or dispose of a product or service based on their existing thoughts and accumulated experiences to satisfy their needs or desires. Retailers researched consumer behavior to identify their needs, preferences, and habits. Specifically, they examined what consumers want to buy, why they bought a particular product or service, why they chose a certain brand, how they made purchases, where they bought, when they bought, and to what extent they made purchases. This information helped retailers develop retail strategies to encourage consumers to choose their products and services.

2.5.2. The Consumer’s Decision Process

The customer's decision process, also known as the consumer decision-making process or buyer's journey, referred to the series of steps or stages an individual goes through when making a purchase. It was a cognitive and behavioral process that

consumers follow when considering, evaluating, and ultimately deciding to buy a product or service. According to Kotler & Armstrong (2023), consumers often went through five stages in the purchasing decision process, including: Need recognition, Information search, Evaluation of alternatives, Purchase decision, and Post purchase behavior.

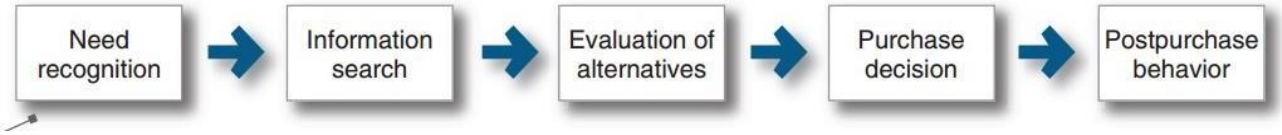


Figure 3. Buyer's decision process. Source: Kotler & Armstrong (2023, p.178).

Need recognition

The purchase process commenced when consumers became aware of their own needs. According to Kotler & Armstrong (2023), the buying process started with the recognition of a deficiency or the perception of a problem or need. Once consumers recognized the disparity between their current state and their desires related to making a purchase, they would proceed to address the shopping issue.

Information search

When consumers recognized their needs, they might seek further information. There were several types of information search behaviors among customers. Most of these efforts involved retrieving information from their own memory regarding past experiences and knowledge about shopping. When the information stored in their memory was insufficient or lacked credibility, consumers would then seek additional external information.

Evaluation of alternatives

When consumers gathered information to assess different options that could potentially satisfy their needs, they often employed various sources of information and different thought processes. The next step was to evaluate and measure these different options against several critical criteria. Objective criteria included product attributes such

as price, design, warranty, etc., among products, brands, and companies. Subjective criteria focused on the symbolic aspects of the product, its branding, and the benefits consumers perceived from the product, as well as their satisfaction when using it. Quality and value were two important criteria that typically influenced purchase decisions and product usage.

Purchase decision

At the conclusion of the evaluation stage, consumers had a ranked set of choices in their purchase intention. The products and brands favored most by consumers had the greatest consumption potential. However, purchase intention was not yet a reliable indicator of the final purchase decision. From purchase intention to the actual decision to buy, consumers were influenced by many factors. Two factors that impacted consumer purchase intentions and decisions were the attitudes of others and situational factors.

Post-purchase behavior

After purchasing a product, consumers would experience either satisfaction or disappointment and engage in post-purchase behaviors. If consumers were satisfied with their purchase, they were likely to buy the same product again in the future. Customers were satisfied when the features and functionality of the product best met their expectations, leading to repurchase intention and positive word-of-mouth recommendations to others. Conversely, when customers were dissatisfied, they might exhibit various attitudes. If the actual product performance fell significantly below their expectations, customers would feel disappointed.

In summary, the customer's decision process was intricately tied to the beauty care industry in Vietnam. It reflected the dynamic and highly competitive nature of this sector, where consumer preferences, trends, and product choices were influenced by a multitude of factors. Understanding and aligning with the decision process was crucial

for beauty brands and retailers to effectively engage with consumers, tailor their marketing strategies, and offer products that resonated with the diverse needs and preferences of the Vietnam market.

This research acknowledged that the customer's decision journey was a fundamental aspect of understanding consumer behavior within the beauty care sector in Vietnam. The customer's decision journey, as outlined in the literature, provided a conceptual roadmap that guided this investigation. Specifically, it aligned with our research objectives by delineating the stages through which consumers progress, from need recognition and information search to purchase and post-purchase evaluation. Our study recognized that the omnichannel retail landscape reshaped this journey, offering consumers diverse touchpoints for engagement and decision-making. By dissecting each stage of the decision journey through the lens of omnichannel retail mix elements and integration degrees, it aimed to uncover how these factors influenced customers' attitudes and intentions at each critical juncture of their path to purchase. This holistic approach allowed the study to unravel the intricacies of the decision journey in the beauty care category while shedding light on the evolving role of omnichannel strategies in shaping consumer behavior, thus contributing to both academic knowledge and practical insights for industry stakeholders.

2.5.3. Theory of Reasoned Action

Fishbein & Ajzen (1977) developed the Theory of Reasoned Action (TRA) in 1967. This theory aimed to provide a consistent framework for studying the relationship between an individual's attitudes and behavior in decision-making. Fishbein & Ajzen (1977) proposed that human behavioral intention could be explained by two key components: "Attitudes" and "Subjective norms." In this theory:

- "Attitudes" were defined as an individual's positive or negative feelings towards performing certain behaviors.
- "Subjective norms" referred to how others perceived an individual's behavior.

Research across various fields such as healthcare, pharmaceuticals, and technology showed that the TRA model was commonly used to explain human behavior related to using services or purchasing goods. However, the TRA had limitations when it came to explaining human behavior. It was developed with the assumption that human behavior was controlled by willpower, and the theory only considers the relationship between an individual's attitudes and behavior. Consequently, this theory had limitations in explaining consumer acceptance behaviors, habitual behaviors, or behaviors that lacked conscious consideration of social factors influencing an individual's consumption behavior.

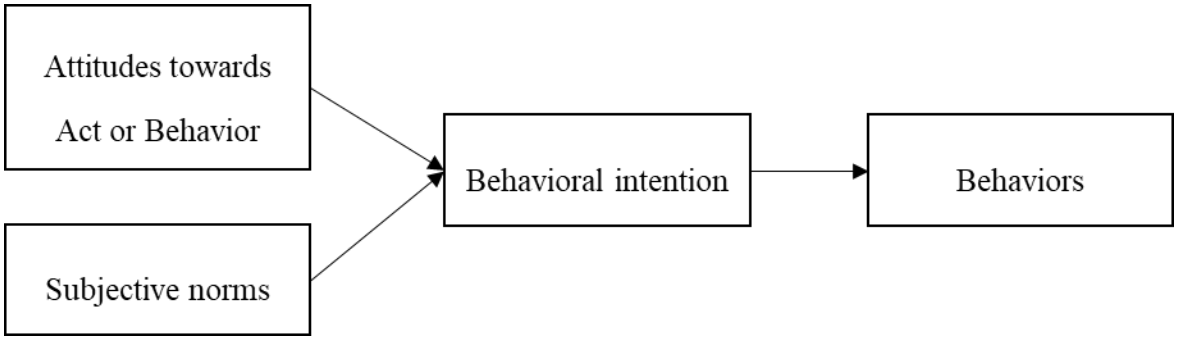


Figure 4. Theory of Reasoned Action. Source: Fishbein & Ajzen (1977)

In the context of this research, the Theory of Reasoned Action (TRA) served as a foundational theoretical framework for understanding and predicting customers' purchase decisions within the beauty care category in Vietnam's dynamic omnichannel retail environment. TRA provided a structured lens through which to examine the psychological and social factors that shape consumers' intentions to make purchases. Specifically, TRA's core concepts, including attitudes toward the behavior (in this case,

purchase intentions) and subjective norms, offered a comprehensive model for dissecting the relationship between omnichannel retail mix elements, integration degrees, and their influence on customers' attitudes and perceived social pressures. By leveraging TRA, this dissertation sought to quantify and analyze the impact of key omnichannel retail factors on customers' attitudes and, in turn, their intentions to make purchases. This application of TRA not only enhanced understanding of the specific dynamics within the beauty care sector but also provided valuable insights for retailers and marketers striving to optimize their omnichannel strategies and foster stronger connections with their target audience in the Vietnam market.

2.5.4. Theory of Planned Behavior

The Theory of Planned Behavior (TPB), developed by Icek Ajzen in 1991 (Ajzen, 1991), represented an extension of the Theory of Reasoned Action (TRA). TPB was conceived to address the limitations of the Theory of Reasoned Action (TRA) by augmenting it with the variable known as "Perceived Behavioral Control."

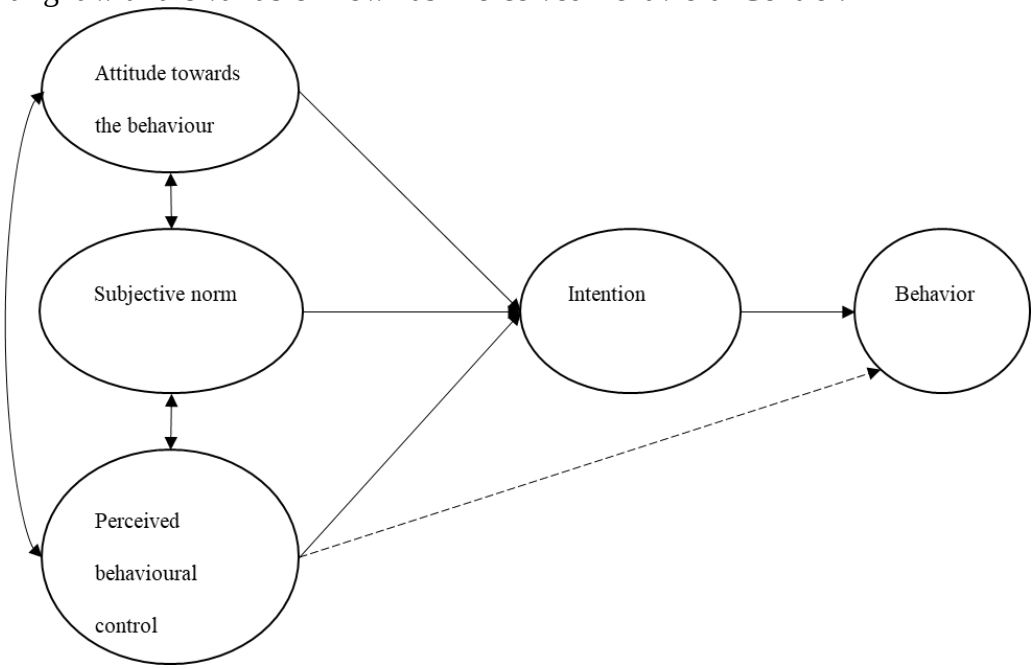


Figure 5. Theory of Planned Behavior. Source: Ajzen (1991)

The Theory of Planned Behavior (TPB) posited that the "Intention" factor served as the key determinant of "Behavior," and individuals, before making any decision, relied on the available information they considered reasonable. This aspect of TPB shared similarities with Fishbein and Ajzen's (1977) Theory of Reasoned Action (TRA). Human "Intention" was influenced by "Attitude," "Subjective Norm," and "Perceived Behavioral Control" in TPB. According to Icek Ajzen's Theory of Planned Behavior (1991), "Perceived Behavioral Control" was an individual's perception of how easily a specific behavior could be carried out. The "Perceived Behavioral Control" factor significantly impacted a person's "Intention," and both "Perceived Behavioral Control" and "Intention" influenced consumer usage behavior.

The Theory of Planned Behavior (TPB) differed from the Theory of Reasoned Action (TRA) by introducing the factor of "Perceived Behavioral Control." TPB was considered an improvement over TRA in explaining and predicting consumer behavior. TPB was advantageous over TRA because it considers deliberate and planned human behavior, where the decision leading to consumer usage behavior was influenced by both "Perceived Behavioral Control" and "Intention."

However, TPB still had limitations. The first limitation was that it did not clearly specify how individuals plan their behavior. The second limitation was that the determinant of intention was not confined to just "Attitude," "Subjective Norm," and "Perceived Behavioral Control." The third limitation was that TPB predicted an individual's actions based on specific criteria, but individuals might not always follow through with their predicted actions.

In the context of this research, the Theory of Planned Behavior (TPB) emerged as a complementary theoretical framework that enriched understanding of customers'

purchase decisions in the beauty care category within the omnichannel retail landscape of Vietnam. TPB extended the foundational concepts of the Theory of Reasoned Action (TRA) by introducing the vital element of perceived behavioral control, which accounted for the perceived ease or difficulty of performing a behavior. Applied to the context of omnichannel retailing, TPB acknowledged that customers' purchase intentions might be influenced not only by their attitudes toward the omnichannel retail mix elements but also by their perception of how much control they had over the purchase process within the omnichannel environment. This additional dimension allowed dissecting the influence on purchase intentions, considering not only attitudes and subjective norms but also the practical aspects of navigating omnichannel retailing. In essence, TPB provided a comprehensive lens through which to examine the interplay between psychological factors, social influenced, and the practical feasibility of making purchases in a beauty care category context dominated by omnichannel retail strategies. By incorporating TPB into research framework, it aimed to offer a holistic perspective that explained the layers of customer behavior, ultimately contributing to the academic understanding and practical insights within the Vietnam beauty care market.

2.5.5. Technology Acceptance Model

In an era characterized by rapid technological advancements and digital transformation, the integration of technology into the retail sector revolutionized the way consumers interact with brands and made purchase decisions. One of the fundamental theories in understanding how technology shaped consumer behavior was the Technology Acceptance Model (TAM). Developed by Fred Davis in the late 1980s (Davis, 1989), TAM was a widely recognized and influential theoretical framework that elucidated the factors influencing individuals' acceptance and use of technology. Initially applied to the adoption of information technology, TAM's core principles had since found relevance in

a broader range of contexts, including retail. In the context of this dissertation, TAM emerged as a valuable theoretical framework for examining how customers in Vietnam's beauty care sector perceived and engaged with the technological elements embedded within the omnichannel retailing environment.

TAM posited that an individual's acceptance and use of technology was primarily determined by two critical constructs: perceived ease of use (PEOU) and perceived usefulness (PU). Perceived ease of use referred to the individual's subjective assessment of how uncomplicated or straightforward it was to utilize a specific technology or system. On the other hand, perceived usefulness pertains to the individual's perception of the extent to which employing the technology enhanced their productivity, performance, or overall effectiveness in achieving specific goals. In essence, TAM posited that individuals were more likely to accept and adopt technology when they perceived it as easy to use and believed that it offered tangible benefits.

Based on the word of Miller & Khera (2010), the TAM could be illustrated as following figure.

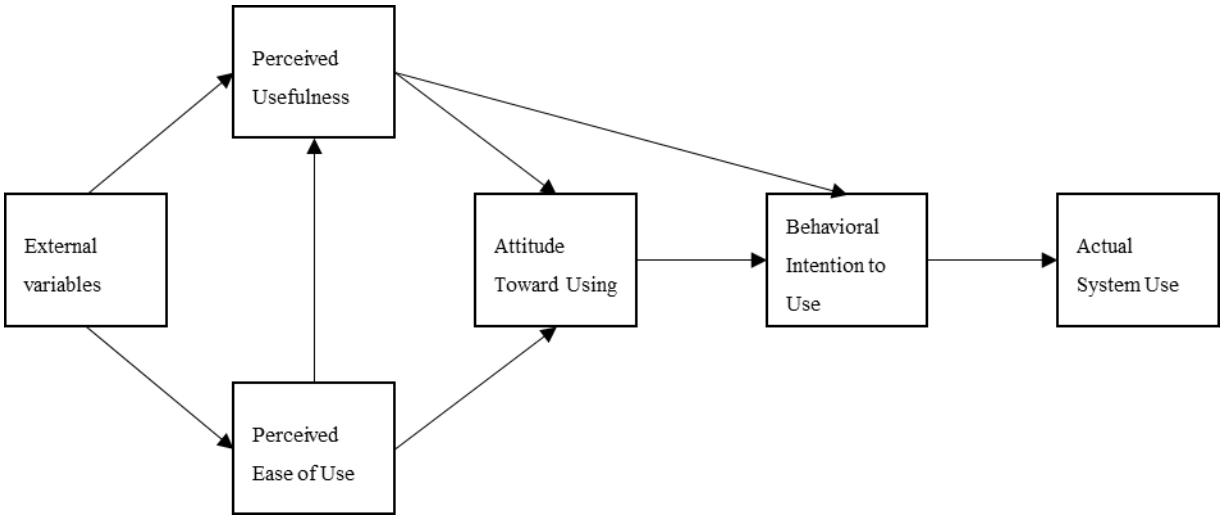


Figure 6. Technology Acceptance Model. Source: Miller & Khera (2010)

Perceived Usefulness referred to an individual's subjective assessment of the extent to which they believed that using a particular technology system or tool would enhance their job performance, productivity, or overall effectiveness in achieving specific goals. In other words, it measured the perceived benefits or advantages of using the technology. High PU implied that the individual believed that the technology was valuable and would positively impact their work or tasks. Low PU suggested that the individual perceived little or no benefit from using the technology.

Perceived Ease of Use reflected an individual's subjective assessment of how easy or difficult they perceived it to be when using a particular technology system or tool. PEOU measured the individual's perception of the ease with which they could learn and interact with technology. High PEOU indicated that the individual viewed the technology as user-friendly and easy to use. Low PEOU suggested that the individual believed the technology was complex, difficult to learn, or cumbersome to operate.

Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) were core components of TAM, a model that explained how individuals form their attitudes and intentions toward adopting and using technology. High PU and high PEOU were

generally associated with a more favorable intention to use technology, while low scores on these dimensions might deter individuals from adopting a particular technology. TAM was widely applied to understand and predict technology adoption and acceptance in various contexts, including consumer technology, organizational systems, and software applications.

In the context of this research, the integration of the Technology Acceptance Model (TAM) served as a pivotal framework for examining the dynamics of how technological elements within the omnichannel retail environment influenced customers' behavior and decision-making processes within Vietnam's beauty care sector. TAM's foundational constructs, perceived ease of use (PEOU) and perceived usefulness (PU), offered a lens through which to explore how customers in this unique market perceived the technological facets embedded within omnichannel retailing. With the beauty care industry in Vietnam experiencing a surge in digital innovations, such as virtual makeup try-on applications and AI-driven skincare recommendations, the relevance of TAM became evident. By leveraging TAM, this dissertation aimed to investigate the extent to which customers find these technologies easy to use and beneficial in their beauty care purchase journey. This empirical analysis not only deepened comprehension of the interplay between consumers and technology but also shed light on the pivotal role of technological acceptance in shaping customer engagement and purchase decisions. In essence, TAM enriched the research framework, allowing for a comprehensive examination of the impact of technology on customers' acceptance and behavior within the context of omnichannel retailing, ultimately contributing to the enriched understanding of consumer dynamics in the Vietnam beauty care market.

2.5.6. Purchase intention

A purchase intention was a consumer behavioral pattern that follows a decision-making process that included different stages to reach a choice (Darley et al., 2010). Each person had different buying ways for any given product, Shugan (1980) suggested that customers were used to changing their decision-making approach according to different environments and situations, and always try to minimize cognitive efforts. They often sought support when they encounter too much information to spend less effort and time making better decisions (Payne, 1982).

Kotler et al. (2017) built a model of consumer purchasing decisions based on the theory of intended behavior. The traditional funnel model showed that most consumer buying behavior was carefully planned. Consumers went through each stage in the decision-making journey from awareness to purchase and endorsement. Customers only made the purchase decision when they had impressive experiences with the product or service. This model was mostly used in durable consumer goods such as cars. Consumers were empowered when making purchasing decisions faster. Indeed, the explosive growth of social media, mobile devices and advanced technology gave consumers unprecedented power to search, compare prices almost instantly, review products and find the best deals on purchases. The new journey to purchasing decision consisted of 5 stages:

(i) Problem recognition was the most important stage because the need could be attracted by internal stimuli (basic human needs) and external (advertising, social networks, promotional information, etc.).

(ii) Customers were attracted to brands so they would search for information about products.

(iii) Customers sought information in the media to evaluate options.

(iv) Purchase decision and purchase action.

(v) Post-purchase reaction to the brand purchased.

The Consumer Decision-Making Process framework was highly relevant to the research question of how omnichannel retailing impacted customers' purchase decision journey in the consumer goods sector. This framework described the various stages that consumers went through when making a purchase decision, including problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase evaluation.

In the context of omnichannel retailing, the framework could help to understood how customers' purchase decision journey was impacted by the various channels available to them, including online, in-store, mobile, and social media. For example, a customer might recognize a need for a particular product while browsing social media, conduct further research on the product through online reviews, and make the purchase in-store or online.

Omnichannel retailing could impact each stage of the consumer decision-making process. For example, by providing a seamless and integrated shopping experience across all channels, omnichannel retailing could make it easier for customers to conduct research, evaluate alternatives, and make a purchase decision. By tracking customers' behavior across all channels, retailers could also gain valuable insights into the factors that influenced customers' decision-making, and tailor their marketing and product offerings to better meet customer needs. Research about the impact of omnichannel on the customer decision journey often found the search for information was the new approach for customers and confirm that in the new context, customers used a variety of channels in the journey (Ewerhard et al., 2019; Fulgoni, 2014; Lynch & Barnes, 2020; Mosquera et al., 2017).

The Consumer Decision-Making Process framework was an important tool for understanding how omnichannel retailing impacted customers' purchase decision journey in the consumer goods sector. By using this framework, researchers could gain insights into the factors that influenced customers' behavior and decision-making and develop strategies to improve the customer experience and increased sales.

According to Kotler et al. (2017), the customer's decision journey included five separate stages. However, customers in omnichannel retailing would mix all the stages at once. Lynch & Barnes (2020) investigated the customer decision-making journey in the context of omnichannel fashion retailing. In the context of omnichannel retailing, they separated the journey into three stages: pre-purchase, purchase, and post-purchase. This approach was also used by Hsia et al. (2020), Klein et al. (2020), Truong (2021), Alang & Nguyen (2022), Gasparin et al. (2022), and Furquim et al. (2022) when investigating the omnichannel in many research.

However, to understood how omnichannel impacted the customer decision journey, there was a need to review how other research measured the impact on the customer decision journey. In Wen's study (2009) focusing on online travel buying decisions within the tourism sector, various factors were identified as influencing the purchase decision process (Wen, 2009). These factors included perceived risk, trust, convenience, price, and information availability. Wen argued that these elements collectively impacted consumers' decisions when purchasing travel products online. Hudson & Thal (2013) examined the tourism decision process and highlighted the significance of social media as a valuable source of information for consumers. They found that social media platforms played a crucial role in influencing consumers' decisions regarding tourism activities, indicating their importance in shaping the customer decision journey.

In the fast-moving consumer goods (FMCGs) sector, Tariq et al. (2013) conducted research in Pakistan and identified brand image, product quality, and product knowledge as the most influential factors affecting purchase intention among consumers. Their study emphasized the importance of these factors in guiding consumer decision-making in the FMCG sector. Vázquez et al. (2014) explored the impact of user-generated content across various industries and sectors. They found that user-generated content significantly influenced consumers' decision-making processes, highlighting its importance as a source of information and validation in the customer decision journey.

Jun and Park's study focused on consumer information search behavior in the Korean market (Jun & Park, 2016). They identified several factors that influenced consumer search behavior, including the type of product, the consumer's level of involvement, and the perceived risk associated with the purchase decision. Understanding these factors was essential for businesses aiming to cater to Korean consumers effectively.

In the fashion industry, Sudha & Sheena (2017) investigated the role of influencers in shaping consumer purchase decisions. They found that influencers served as trusted sources of information for consumers, influencing their purchasing behavior through content, recommendations, and social media presence. This highlighted the importance of influencer marketing strategies in guiding consumers through the fashion purchase journey.

Hanaysha (2018) examined determinants of purchase decisions in the Malaysian retail market, identifying perceived value, corporate social responsibility, social media marketing, store environment, and sales promotion as crucial factors. These elements collectively influenced consumers' perceptions and decisions when making purchases in the Malaysian retail landscape.

Dasgupta & Grover (2019) explored digital strategies' impact on the consumer decision journey in India. Their research indicated that digital strategies could influence consumers' decision-making processes at all stages, from need recognition to post-purchase evaluation. This underscored the importance of digital marketing initiatives in shaping the consumer decision journey within the Indian market.

It could be seen that other research measured the impact of some factors on the customer decision journey through other factors. The result of a customer decision journey was whether the customer decided to make a purchase or not. In the context of this thesis on how omnichannel impacted the customer decision journey, it was needed to separate the omnichannel as a factor, rather than simply exploring how people made their purchase decision in the context of omnichannel. Moreover, the final stage of a customer purchase decision process, which was the purchase intention, would be focused on the applications in retail businesses.

2.6. Research Gaps

The lacked research on omnichannel retailing from the customer's perspective, combined with the absence of comprehensive studies in Vietnam, poses a significant gap in understanding the impact of omnichannel strategy on customer decision-making journeys. Previous research predominantly focused on measuring customer sentiments and behaviors within established omnichannel environments, assuming successful implementation by retailers. However, there was a need to investigate the customer's viewpoint to gain a comprehensive understanding of the effects of omnichannel retailing on their decision-making processes in the context of Vietnam.

Addressing this research gap was essential due to the following factors:

- Gap in customer perspective: existing literature failed to explore omnichannel retailing adequately from the customer's point of view. Understanding customer perceptions, preferences, and experiences

throughout their decision-making journeys was crucial for retailers to enhance their omnichannel strategy effectively.

- Systematic review recommendations: encouragement from various systematic reviewed to investigated omnichannel retailing from the customer's perspective highlighted the significance of exploring this research area. By aligning with these recommendations, this study could contribute to the existing knowledge base and fill the identified gap.
- Insufficient evidence for retail transformation: previous research did not provide sufficient evidence to encourage retailers to undertake the transformation to omnichannel retailing entirely. By understanding the impact of omnichannel retail on the customer's decision-making journey, this research could provide empirical insights that could better guide retailers in adopting and optimizing their omnichannel strategies reflecting through the retail mix elements.
- Contextual relevance in Vietnam: the absence of comprehensive research in Vietnam added a unique dimension to the research problem. Investigating the impact of omnichannel retailing on the customer decision-making journey in the Vietnam context could offer valuable insights for retailers operating in this specific market, helping them made informed decisions and tailor their strategies accordingly.

By conducting a thorough investigation into the impact of omnichannel retailing on the customer decision-making journey in Vietnam, this research aimed to bridge the existing gap in the literature and provided practical implications for retailers looking to enhance their omnichannel strategies.

2.7. Research Model

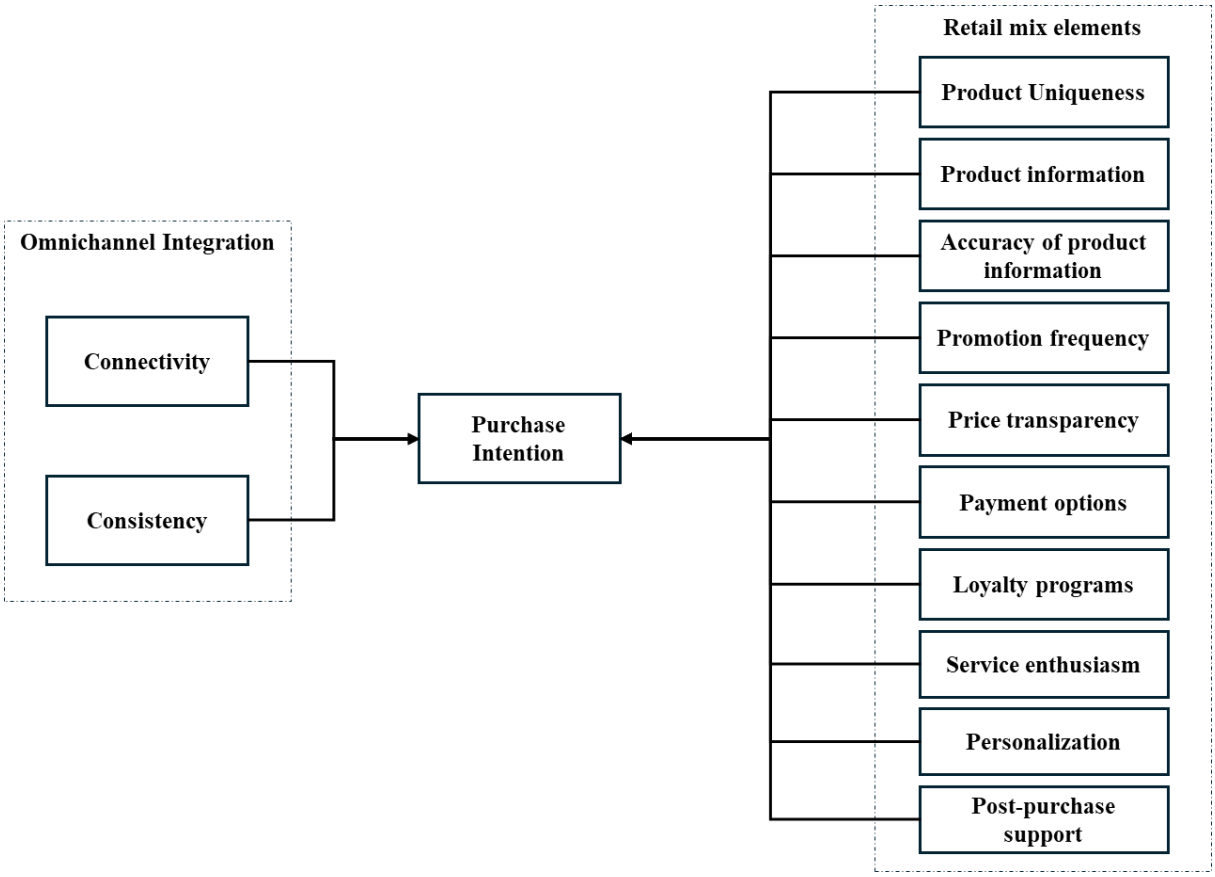


Figure 7. Research Model. Source: Author's complication.

The above figure shows the research model of this thesis. The main research question was how omnichannel retailing impacted the purchase intention of customers. The omnichannel would be measured through consistency degree and connectivity degree based on the work of Gasparin et al. (2022). Three key retail mix elements would be explored after the qualitative phase when the author interviewed omnichannel experts in Vietnam market to define the three most important elements in the context of Omnichannel in Vietnam.

2.8. Hypothesis development

The key hypothesis of this research was:

- Hypothesis 1 (H1): There was a significant relationship between the omnichannel integration level which was measured through connectivity and consistency with the purchase intention.
- Hypothesis 2 (H2): Retail mix elements had significantly different effects on purchase intention.

After conducting the qualitative research, the following sub-hypothesis for Hypothesis 2 were as follows, which indicated the hypothesis retail mix elements over the purchase intention:

- H2.1: Product uniqueness was positively related to the customer's purchase intention.
- H2.2: Product information was positively related to the customer's purchase intention.
- H2.3: Accuracy of product information was positively related to the customer's purchase intention.
- H2.4: Promotion frequency was positively related to the customer's purchase intention.
- H2.5: Price transparency was positively related to the customer's purchase intention.
- H2.6: Payment method was positively related to the customer's purchase intention.
- H2.7: Loyalty program was positively related to the customer's purchase intention.
- H2.8: Service enthusiasm was positively related to the customer's purchase intention.

- H2.9: Personalization was positively related to the customer's purchase intention.
- H2.10: Post-purchase support was positively related to the customer's purchase intention.

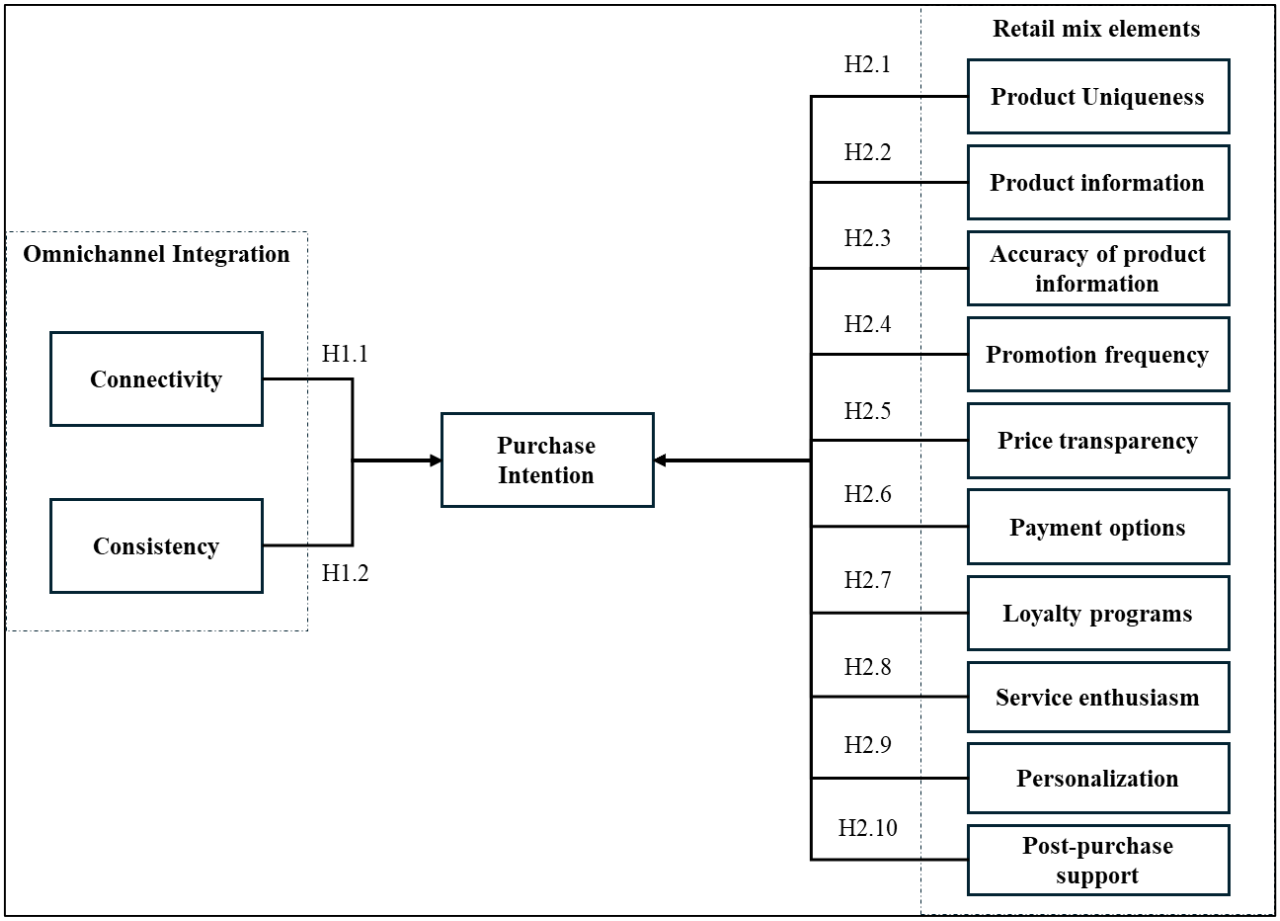


Figure 8. Conceptual framework. Source: Author's complication.

2.9. Summary

The Literature Review chapter offered a comprehensive examination of the key concepts, theories, and existing research relevant to the impact of omnichannel retailing on the customer's decision-making journey within the beauty care sector in Vietnam.

The chapter began by introducing omnichannel retailing, providing an in-depth exploration of its core components and its transformative impact on consumer behavior. It emphasized the convergence of online and offline channels, personalized marketing strategies, product availability, and purchase process convenience within the omnichannel retail landscape. The literature demonstrated that omnichannel retailing redefined customer expectations, providing them with seamless and integrated shopping experiences across multiple touchpoints.

Within the theoretical framework, the chapter introduced two fundamental constructs: the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB). TAM, rooted in the psychology of technology adoption, was dissected to reveal its relevance in understanding customer acceptance of technology within omnichannel retailing. The chapter elucidated the significance of perceived usefulness (PU) and perceived ease of use (PEOU) in shaping customers' attitudes toward technology, ultimately influencing their purchase intentions.

TPB, another foundational theory, was examined for its applicability in assessing consumer behavior and purchase intentions within omnichannel environments. It delved into the roles of attitudes, subjective norms, and perceived behavioral control in shaping customer decision-making. The literature emphasized the importance of social influence and perceived control over the purchase process in understanding customers' intentions within the context of omnichannel retailing.

The synthesis of these theoretical perspectives provided a structured framework for comprehending the relationships between technological acceptance, customer attitudes, social influenced, and practical feasibility as customers navigated the omnichannel retail landscape. This foundation forms the basis for empirical analysis in

subsequent chapters, aiming to unveil the impact of omnichannel retailing on customers' purchase decision journeys within the vibrant beauty care sector of Vietnam.

CHAPTER III:

METHODOLOGY

This research would follow the mix-method design. According to Saunders et al. (2016), the field of multiple research methods known as "mixed methods" incorporated the use of both quantitative and qualitative data gathering methods and analytical procedures. The mixed-method design provided a holistic perspective on the research problem, enabling a deeper understanding of the phenomenon under investigation. In detail, this research would conduct the sequential exploratory which involved the separate use of qualitative methos first, then the quantitative methods (Saunders et al., 2016). The qualitative phase would allow for a detailed exploration of Vietnamese experts in an omnichannel retail environment. The subsequent quantitative phase would enable the collection of larger-scale data, allowing for statistical analysis and generalization of findings.

3.1. Philosophical underpinnings of research design

Research philosophy encompassed the beliefs and assumptions underlying the methods and interpretations in scientific inquiries. Two primary aspects of research philosophy were objectivism and subjectivism, each presenting distinct perspectives on the nature of reality and the meant of acquiring knowledge (Leedy & Ormrod, 2010). Objectivism was a research philosophy grounded in the belief that reality exists independently of human perceptions or beliefs (Saunders et al., 2016). It posited that the external world was made up of objective facts and truths that could be discovered and verified through empirical observation and rational analysis. This philosophy aligned with positivism, which emphasized observable, measurable phenomena and the use of scientific methods to generate knowledge. In objectivist research, the researcher assumes

a detached and neutral stance, striving to minimize personal biases and influence on the study. The aim was to produce reliable, generalizable, and replicable findings that contributed to the broader understanding of the phenomena under investigation.

In contrast, subjectivism was a research philosophy that acknowledged the central role of human perceptions, experiences, and interpretations in understanding reality. It posited that knowledge was constructed through social interactions and individual experiences, suggesting that reality was not a fixed entity but rather a fluid and subjective construct (Bell et al., 2022). This philosophy aligned with interpretivism, which emphasized the importance of understanding the meaning and context of human behavior. Subjectivist research involved a more immersive and reflective approach, where the researcher engaged with participants to explore their perspectives and experiences.

Both objectivism and subjectivism offered valuable perspectives for conducting research, each with its strengths and limitations. Objectivism provided a rigorous and systematic approach to uncovering objective truths and generalizable findings, while subjectivism offered deep insights into the subjective experiences and contextual factors that shape human behavior. Researchers had to carefully consider these philosophical underpinnings when designing their studies, ensuring that their chosen approach aligned with their research questions and objectives. This research would use subjectivism which implied that the phenomenon of omnichannel retailing could be analyzed through the view of researchers and humans (through expert interviews) and customer's responses over the survey questionnaires.

To gain a more understanding of the research design, this thesis would use the research onion developed by Saunders et al. (2016) which comprehended five key aspects

of research development: Philosophy, Approach to theory development, Methodological choice, Strategies, Time horizons, and Techniques and procedures.

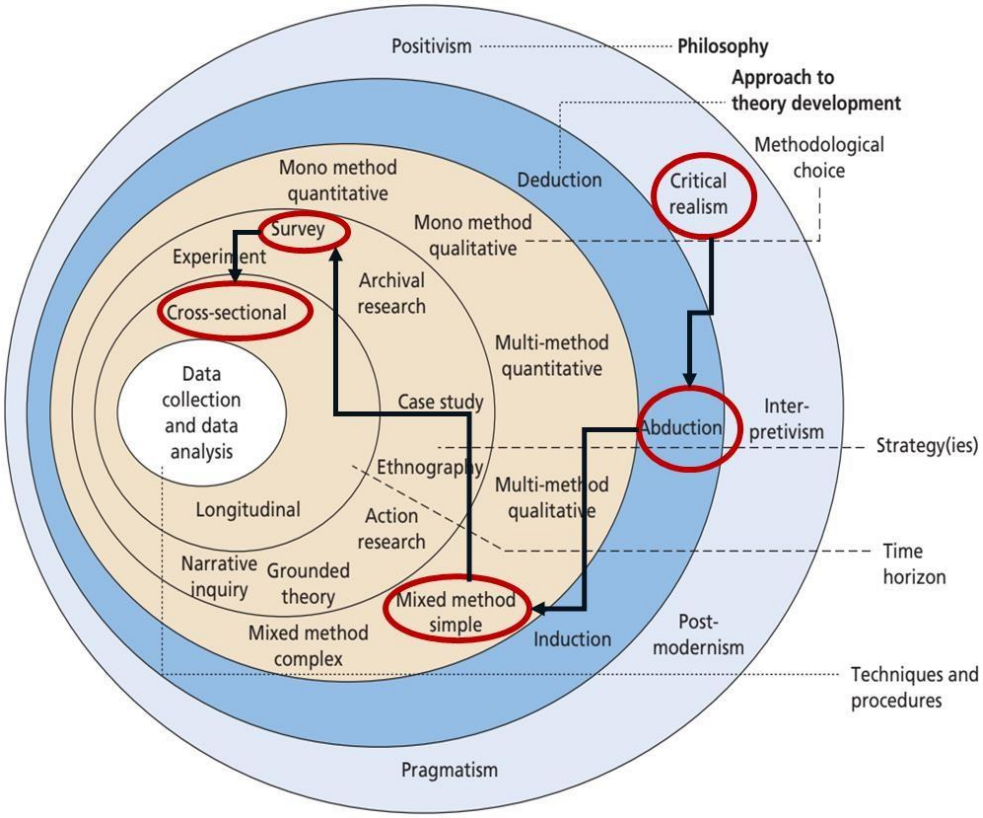


Figure 9. Research Onion applied in this thesis.

Critical realism was a philosophical approach to understanding science that combined a realist ontology with a critical stance towards knowledge production (Easterby-Smith et al., 2012). Developed by philosophers like Roy Bhaskar, critical realism sought to address the limitations of both positivism and interpretivism by acknowledging the reality of the external world while recognizing the complexity of social phenomena and the fallibility of human knowledge. Critical realism was grounded in a realist ontology, which asserts that there was a reality independent of our thoughts, beliefs, and perceptions. This reality included both the natural world and the social

structures that influenced human behaviour. However, critical realism also adopted a critical epistemology, emphasizing that our understanding of this reality was always mediated by our cognitive and social processes, making our knowledge partial and fallible. The thesis adopted a realist ontology, acknowledging that there was a reality independent of our perceptions. This included both the tangible aspects of omnichannel retailing, such as the availability of products and services, and the intangible aspects, such as customer satisfaction and purchase intentions. However, the research also recognized the fallibility of human knowledge and the complexity of social phenomena, consistent with critical realist epistemology. This dual approach allowed the research to critically examine how various elements of the retail mix influenced consumer behaviour while acknowledging that our understanding was mediated by cognitive and social processes.

Abduction was a mode of reasoning often used in theory development, particularly within the context of critical realism (Saunders et al., 2016). Unlike deduction, which derived specific predictions from general rules, and induction, which generalized from specific observations, abduction involved forming a plausible hypothesis to explain a set of observations. It was a creative inferential process that sought to identify the explanation for the phenomena under study. Abduction was especially useful in social sciences, where complex and multifaceted phenomena often defy straightforward explanation. In the context of critical realism, abduction allowed researchers to move from empirical observations to hypotheses about the underlying mechanisms and structures that generate these observations. This approach was particularly valuable when studying complex systems, such as the omnichannel retail environment, where multiple factors interact in dynamic and often non-linear ways.

This thesis employed abduction to develop and refine theories about the factors influencing purchase intentions within the omnichannel beauty care sector in Vietnam. The research began with the collection of empirical data through surveys, interviews, and other methods. For example, the thesis gathered data on customer satisfaction with various aspects of the omnichannel retail experience. Using abduction, the thesis generated hypotheses about the underlying mechanisms that could explained these observations. These hypotheses were then tested through further empirical analysis and iteratively refined based on the findings. Abductive reasoning allowed for the continuous adjustment of theoretical models to better fit the observed data.

Regarding the Methodological choice, Time horizon, and Techniques and procedures, this research would employ Mixed method simple, Survey and Interviewed with Cross-sectional data. Details for these choices would be discussed in the following sections. The data collection and data analysis would be presented in detail.

3.2. Overview of the Research Problem

The existing body of research failed to furnish retailers with compelling empirical evidence that unequivocally supports the imperative for a complete transition to omnichannel retailing. This research identified a critical gap wherein the cumulative evidence to motivate and guide retailers in embracing and optimizing omnichannel strategies remained insufficient. By probing into the influence of omnichannel retailing on the customer's decision-making journey, this study aspired to offer empirical insights that were poised to better equip retailers in their strategic evolution.

A detailed exploration of the repercussions of omnichannel retailing on the customer's decision-making journey within the Vietnam milieu stood as an endeavor that could yield invaluable dividends. It not only had the potential to serve as an instructive

guide for retailers navigating the dynamics of this specific market but also furnished them with the acumen to make well-informed decisions and calibrate their strategies.

3.3. Research Design

The qualitative phase employed in-depth interviews. A purposive sampling strategy would be employed to select participants who had experiences in omnichannel retailing in the consumer goods sector. The purpose of this stage was to choose key retail mix elements from omnichannel retailing that could impact the customer's purchase intention in Vietnam. The data collected in the qualitative phase would be transcribed, coded, and analyzed using thematic analysis. This approach would involve identifying patterns, themes, and key factors that emerged from the data. The analysis would be conducted systematically, ensuring rigor and reliability in the interpretation of the qualitative findings. The insights obtained from this phase would inform the subsequent quantitative data collection and analysis. The interviewer would ask to address one question:

What impact on customers' purchase decision making process in omnichannel retailing within the context of beauty care product industry in Vietnam?

The recordings would be summarized into text and keywords, statistical analysis techniques would be applied to select keywords corresponding to the criteria that could be proposed as a research scale. Interview results would be analyzed, grouped, classified, compared and coded as the basis for designing survey questions and Likert scale for each criterion.

The quantitative phase would involve the collection of larger-scale data through surveys or questionnaires administered to a broader sample of customers. The sampling strategy would aim for a representative sample from the target population. The survey

instruments would be designed to measure various constructs related to customers' decision-making process, satisfaction, loyalty, and purchase behavior. The data collected would be quantitative, allowing for statistical analysis. The quantitative data collected would be subjected to appropriate statistical analysis techniques. This might include descriptive statistics, inferential statistics, correlation analysis, and regression analysis. The statistical analysis would help identify relationships, patterns, and trends in the data, allowing for a deeper understanding of the impact of omnichannel retailing on customers' purchase decision journeys. This quantitative analysis would also facilitate comparisons and generalizations across the sample population.

3.4. Population and Sample

The scope of this research focused on the impact of omnichannel retailing on customers' purchase decision journey in the consumer goods sector in Vietnam. It included the examination of various channels and touchpoints utilized by retailers, customers' navigation through different stages of the decision journey, and the factors influencing their decision-making process within the omnichannel environment. The study aimed to provide practical recommendations for retailers to improve their omnichannel strategies and enhance customer experiences. Data collection would involve both quantitative and qualitative methods, and the study would target customers and retailers in the consumer goods sector in Vietnam.

Christensen et al. (2015 p. 154) provided some valuable tips for sampling. First, if the population was low enough to cover all, the research should include them all. However, in the case of a large population that it was hard to cover all the cases, Christensen et al. (2015) stated that the larger the sample, the more thorough the research was. There was a trade-off between the sample size and the efficiency rate, in other

words, the sample size and the related cost to implement the research. Fortunately, a table showed how many cases in the sample relate to each population size, as showed in the following figure. Christensen et al. (2015) also suggested using a sample size calculator, "a statistical program used to provide a recommended sample size".

Sample Sizes for Various Populations of Size 10–50 Million

N **stands for the size of the population.** ***n*** **stands for the size of the recommended sample. The sample sizes are based on the 95% confidence level.**

N	*N*	*N*	*n*	*N*	*n*	*N*	*N*	*N*	*n*
10	10	130	97	250	152	950	274	10,000	370
20	19	140	103	260	155	1,000	278	20,000	377
30	28	150	108	270	159	1,100	285	30,000	379
40	36	160	113	280	162	1,200	291	40,000	380
50	44	170	118	290	165	1,300	297	50,000	381
60	52	180	123	300	169	1,400	302	75,000	382
70	59	190	127	400	196	1,500	306	100,000	384
80	66	200	132	500	217	2,000	322	250,000	384
90	73	210	136	600	234	3,000	341	500,000	384
100	80	220	140	700	248	3,500	346	1,000,000	384
110	86	230	144	800	260	4,000	351	10,000,000	384
120	92	240	148	900	269	5,000	357	50,000,000	384

Figure 10. Sample Sizes for Various Populations of Size 10-50 million. Source: Christensen et al. (2015 p. 155)

To define the sample size for this research, the author needed to calculate the number of people in the population in this research. The beauty care product was unique because most of customers were female (Statista, 2017). So, the population was narrowed to females in Vietnam. Moreover, with the technology applied in omnichannel retailing, the age group should be 22-35 years old who were the main shoppers in beauty and tech-savvy. Out of total population 100 million people, females accounted for 50,1% (General Statistics Office of Vietnam, 2023). Christensen et al. (2015) provided a table to choose

sample sizes for various populations. So, the sample size of 500 would be sufficient for this research.

The scope in details as following:

- Category selection: Beauty care
    - It was more practical to select a particular category to conduct this research in the consumer goods sector. According to the research done by McKinsey in Vietnam in 2022, beauty care (including skincare and makeup) category could represent the consumer goods sector in terms of omnichannel retailing in Vietnam because this category had medium-high involvement and purchase decision maker was also the consumer who uses the products. Moreover, McKinsey conducted the research with 1,074 participants and confirmed that the skincare and makeup sector had 69% consumers to use omnichannel retailing, which takes the third position of the highest customers to use the omnichannel retailing.
- Participant profile selection:
    - Qualitative phase: 30 experts in Omnichannel retailing in Vietnam.
    - Quantitative:
        - Sample size: 500 customers
        - Gender: 100% female
        - Age: 22-35 years old, who had their own earnings and made their own purchase decisions of products for their own use or family use.
        - Location: Ho Chi Minh city as the representative city of Vietnam

- Requirements:
    - Beauty care customers who bought beauty care products at least once in the past 3 months.
    - Be aware of multi-channel shoppers (the term multi-channel would be replaced when communicating with participants because the term “omnichannel” might be not familiar with consumers).
    - 30 experienced experts in fast-moving-consumer-goods, retail industries in Vietnam, especially with activities related to Omnichannel retailing, would be interviewed in-depth with open-ended questions.

The in-depth interview would be conducted with 3 open questions as follow:

- Question 1. In your opinion, what are the key retail mix elements that significantly influenced customer engagement and purchase behavior in the context of omnichannel retailing?
- Question 2. From your experience, how do you perceive the role of different retail mix elements (product, price, place, promotion, people, process, physical evidence) in creating a seamless and satisfying customer experience across various channels?
- Question 3. Considering the Vietnam market, which specific retail mix element do you believed played the most crucial role in considering customer loyalty and repurchase intention in an omnichannel environment?

Exchanges and discussions would be taken notes, and then typed into text. Statistical analysis techniques would be applied to select keywords corresponding to

retail mix elements. Interview results would be analyzed, grouped, classified, compared and coded to serve as a basis for designing survey questions and Likert scales for each retail mix element. The initial questionnaire was reviewed and consulted with a professional market research company in Vietnam before being expanded to a customer survey with a broader target group.

The interviewed experts' information and the questionaire for quantitative research were provided in the Appendix.

3.5. Data Analysis

3.5.1. Overview of data analysis process

This part would present how data analysis process would be conducted through both qualitative and quantitative phases of this research. The data analysis process for this research involved a two-fold approach, beginning with a qualitative phase followed by a quantitative phase.

Phase 1: Qualitative data analysis

- Step 1: Data collection
    - In the qualitative phase, data was collected through in-depth interviewed with 30 experts in the field of omnichannel retailing in Vietnam. These interviewed aimed to gather insights and detailed perspectives on the impact of omnichannel retailing on customers' purchase decision journeys. The interviewer would note down key main points for each question.
- Step 2: Develop key retail mix elements based on interview results
    - The qualitative findings would be synthesized into key retail mix elements based on the mentioning from experts. The counting of key elements would be conducted to understand the most

important elements to the purchase descison making process from the view of experts. Then, associated elements from big groups would be derived for questionnaire development.

Phase 2: Quantitative data analysis

- Step 1: Survey design
    - Following the qualitative phase, a quantitative survey was designed based on the key findings identified from the interviews. The survey included questions related to the derived retailing mix elements.
- Step 2: Data collection
    - The quantitative survey was administered to a larger sample, capturing responses from a broader audience of consumers in the beauty care sector in Vietnam. This phase aimed to gather structured data that could be quantified and statistically analyzed. The author hired a third-party agency in the market research industry to conduct an online panel survey. The company was Rakuten Insight (Rakuten, n.d.-b). Established in 1997, Rakuten Insight Global was one of the leading market research companies in the world (Rakuten, n.d.-a).
- Step 3: Statistical analysis
    - The collected quantitative data underwent statistical analysis, including descriptive statistics to summarize key variables and inferential statistics to examine relationships and patterns. Techniques such as correlation analysis and regression analysis were employed to find quantitative insights.

- Step 4: Integration of findings
    - The qualitative and quantitative findings were integrated to provide a comprehensive understanding of the research topic. Patterns and correlations identified in the quantitative data were enriched and contextualized by the qualitative insights obtained from expert interviews.
- Step 5: Conclusion and recommendations
    - The combined findings contributed to the formulation of conclusions and actionable recommendations. These conclusions guide the research's implications for omnichannel retailing strategies in the beauty care category, offering valuable insights for both academics and industry practitioners.

The following section would delve into the details of quantitative data analysis techniques used in this research.

3.5.2. Descriptive statistics

Descriptive statistics was a fundamental process of data analysis, offering an informative summary of the essential features in a dataset. Serving as the initial step in the analysis process, descriptive statistics provided researchers with valuable insights into the distribution, central tendency, and variability of the data (Saunders et al., 2016).

Measures such as mean, median, and mode convey the central tendency, offering a representative value around which data points cluster (Mendenhall et al., 2013). These measures were particularly valuable in capturing the average sentiment or opinion of participants, providing an overview understanding of their collective perspectives.

Variability measured, such as standard deviation, illuminate the extent of dispersion or spread in the dataset (Mendenhall et al., 2013). This information was vital

for comprehending the degree of agreement or divergence among participants in their responses. Additionally, frequency distributions and percentiles contributed to the understanding of categorical variables, revealing the distribution of opinions and the relative positioning of specific values within the data set (Mendenhall et al., 2013).

Data visualization was also critical in this research. The data visualization provided a quick view into the complex relationships amongst many variables in the study (Mendenhall et al., 2013). Data visualization would be used extensively in this research due to the characteristics of this research, exploring the status of omnichannel retailing in Vietnam.

3.5.3. Analysis of Variance (ANOVA)

Analysis of Variance (ANOVA) was a powerful statistical technique employed in research to assess whether there were any significant differences between the meant of two or more groups (Mendenhall et al., 2013). It provided a framework for comparing variations within and between groups, enabling researchers to draw conclusions about the influence of independent variables on a dependent variable.

ANOVA came in different forms, each catering to specific research scenarios. One-way ANOVA was applicable when comparing meant across one independent variable with multiple levels, while two-way and multiway ANOVA extended the analysis to situations involving two or more independent variables (Mendenhall et al., 2013). This research would use mostly the one-way ANOVA to find the difference amongst demographic groups.

In the context of one-way ANOVA, the hypothesis testing involved assessing whether there were statistically significant differences among the meant of three or more independent groups. The null hypothesis (H_0) and the alternative hypothesis (H_1) for one-way ANOVA were formulated as follows:

H_0: The meant of the groups were equal.

H_1: At least one group's mean was different from the others.

The results of ANOVA would use the p-value. With p-value < 0.05, the researcher could reject *H_0* and conclude that there was difference amongst groups regarding a particular demographic distinction such as age groups, job groups, income groups, etc.

3.5.4. Reliability test: Cronbach's Alpha

Cronbach's Alpha coefficient was used to measure the internal consistency of the scale (Collins, 2007). The higher the Cronbach's Alpha coefficient, the higher the homogeneity of the variables, that was, the higher the level of association of the measurement variables, then the variables would measure the same attribute to be measured. Many researchers agreed that a Cronbach's Alpha coefficient of 0.8 or higher was a good measurement scale; However, some researchers suggested that 0.6 or more was acceptable in cases where the concept under study was new or new to respondents in the context being researched (Holcomb & Cox, 2017). Cronbach's Alpha coefficient had to be 0.7 or higher, or even 0.77, for the scale to be considered reliable and effective (Osburn, 2000). However, Cronbach's Alpha coefficient also depended on sample size. The smaller the sample size, the more likely it was that the Cronbach Alpha coefficient was not high (due to lacked data to verify the correlation between variables). Limitations of Cronbach's Alpha coefficient did not indicate which variables should be eliminated and which variables should be retained.

Table 1. Cronbach's Alpha usage.

Cronbach's Alpha	**Internal consistency**
0.9 <= alpha	Excellent

0.8 <= alpha < 0.9	Good
0.7 <= alpha < 0.8	Acceptable
0.6 <= alpha < 0.7	Questionable
0.5 <= alpha < 0.6	Poor
alpha <= 0.5	Unacceptable

3.5.5. Multivariate regression

The multivariate linear regression model was an equation that described the relationship between the dependent variable and the independent variables (Mendenhall et al., 2013). The model had the following form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k X_k$$

In the multivariate regression model, there were two tests: F test and t test. The F test was used to determine whether there was a significant relationship between the dependent variable and all independent variables (Wooldridge, 2020). The F test was considered an overall significance test. The null hypothesis of this test was there were not any variables in the model that had a significant relationship with the dependent variable.

If the F-test was considered an overall significance test, then the t-test was used to determine whether each individual independent variable was significant or not. The t-test was performed separately for each independent variable in the model. The t-test was considered an individual significance test. The null hypothesis of this test was there was no significant relationship between that dependent variable and the independent variable. When analyzing the multivariate regression analysis, the F test would be looked at first, then the t-test for each independent variable to find the variable which had the significant relationship with the dependent variable (Wooldridge, 2020). Each test would use the p-

value to reject the null hypothesis. If p-value < 0.05, there was enough evidence to reject the null hypothesis in each test.

The combination of correlation and regression analysis could provide insights into the interaction between independent variables and the dependent variable. Correlation analysis could point out a specific linear relationship between one variable to the dependent variable while the regression analysis could show the interaction with multiple independent variables with the dependent variable. Sometimes, correlation analysis pointed out strong or moderate linear relationships from one variable while when combining with other independent variables, that variable showed little or no significant relationship with the dependent variable. The difference in analysis between correlation and regression could help researchers to understand deeper with the interaction of independent variables and dependent variables.

3.6. Measurements and Questionnaire Designs

This section outlined the measurements that would be used to evaluate the impact of omnichannel retailing on customers' purchase decision journey in this research. The research aimed to assess the integration levels of consistency and connectivity as indicators of omnichannel retailing, while also measuring the customer's purchase intention as a key outcome of the purchase decision journey.

Regarding the focused response of this research, which was the purchase intention, it would be measured based on the answers of participants whether they decide to increase or decrease their purchase intention if a particular brand changes their integration level.

The qualitative phase would explore key retail mix elements from experts' opinions to the successful implementation of omnichannel retailing in Vietnam. Then,

those elements would be investigated on how important they were from the customer's perspective.

To address the above hypotheses, the questionnaire structure should be focused on gathering data related to integration levels, the impact of retail mix elements, and purchase intention. Questionnaire survey was a method of collecting quantitative information on a large scale, using survey and investigation questionnaires, which synthesizes all prepared questions to collect information from research subjects (De Vaus & de Vaus, 2013). Questions were often 'closed' with given answer options and/or had additional open options for respondents to share and further explained their answers.

Questionnaires were prepared and sent to research subjects to self-answer through popular forms such as online surveys - sending survey links to respondents, phone surveys (telephone survey) – call to interview research subjects and help them fill out the questionnaire, or the survey distributes the questionnaire directly to respondents to complete themselves.

Regarding the advantages, questionnaires were a straightforward and efficient method for data collection. They could be easily managed and implemented, requiring minimal training for those administering them. The simplicity of their design made them accessible to a broad audience, ensuring that data collection could proceed smoothly without extensive oversight. The development of questionnaires was notably quicker compared to other data collection methods such as interviewed or focused groups. With predefined questions, researchers could swiftly design and distribute questionnaires, accelerating the timeline from conception to data collection. This time efficiency was particularly beneficial for projects with tight deadlines.

Questionnaires were a cost-effective solution for gathering data. While the overall cost might vary depending on the type of survey (e.g., online versus mail), they generally

required fewer resources than other methods. Printing and distribution costs could be minimized or eliminated entirely with digital surveys, making them a budget-friendly option for many research projects. One of the most significant advantages of questionnaires was their flexibility in distribution. They could be managed remotely through various channels such as online platforms, mobile devices, mail, email, or phone. This remote administration allowed researchers to reach respondents without the need for physical presence, facilitating data collection from diverse and widespread populations.

Questionnaires could collect data from many respondents efficiently. This scalability made them ideal for large-scale studies where extensive data was required. By reaching a broad audience, researchers could obtain a more comprehensive understanding of the research topic. Questionnaires allow researchers to ask multiple questions about a topic, providing extensive flexibility in data analysis. This capability enabled the collection of detailed information and the exploration of various dimensions of the research question. The diversity of questions could lead to a richer dataset, supporting more nuanced and sophisticated analysis. Questionnaires were versatile in the types of data they could collect. Researchers could gather information on attitudes, opinions, beliefs, values, behaviors, and factual data. This variety allowed for a comprehensive understanding of the research topic from multiple perspectives, enriching the overall analysis.

However, researcher also kept in mind that disadvantages of questionnaires. For example, survey respondents might not provide accurate or honest answers if they were not properly encouraged. This lacked of motivation or incentive could lead to skewed results and compromise the reliability of the data collected. Researcher had to employ strategies to encourage respondents to provide truthful and meaningful responses. Respondents might feel uncomfortable disclosing personal or sensitive information in a

questionnaire. This reluctance could result in incomplete or inaccurate responses, particularly when addressing sensitive topics such as health, finances, or relationships. Researcher had to consider the potential for respondent apprehension and implement measures to ensure confidentiality and anonymity. Survey respondents might provide inaccurate answers due to memory limitations or survey fatigue. They might struggle to recall specific details or experiences accurately, leading to inaccuracies in their responses. Additionally, respondents might become disengaged or bored with lengthy surveys, resulting in rushed or careless answers.

Closed-ended questions, while efficient for data collection, might yield less valuable information compared to other question types. They limited respondents' ability to express nuanced or complex opinions and might overlook important insights that could emerge from open-ended responses. Researcher had to carefully design questionnaires to balance closed-ended questions with opportunities for qualitative input. Data errors could occur when respondents fail to fully answer all questions in a questionnaire. Incomplete responses could skew the results and introduce bias into the dataset. Researcher had to carefully monitor response rates and address any discrepancies or missing data to ensure the integrity of the findings.

The questionnaire used in this study included the following sections:

- Section 1: Introduction and Informed Consent
    - This section introduced the research, explained its objectives and importance. It also included information about participant confidentiality and informed consent, ensuring that participants agreed to take part in the study voluntarily.
- Section 2: Demographics Information

    - The demographics section aimed to gather information about the participants to understand their characteristics and ensure a representative sample.
    - This section might not directly relate to any specific hypothesis but served as essential background information for analyzing the data and potential data mining in the analysis process of this research.
- Section 3: Integration Levels in Beauty Care Brands
    - This section assessed the different integration levels of beauty care retailer brands in Vietnam and examined how customers access the consistency and connectivity levels of integration across various channels.
- Section 4: Impact of Retail Mix Elements
    - This section asked for customers' feedback on certain retail mix elements of certain beauty care brands.
- Section 5: Assessment of Purchase Intention
    - This section focused on assessing participants' purchase intentions concerning beauty care products from the retailer brands they purchased before. This section would ask about the likelihood of repurchasing or changing the purchase of certain retailer brands. Moreover, this section also asked about customers' opinions on how they changed their purchase intentions if the retail mix elements and integration levels of the brand changed.
- Section 6:
    - The final section provided an opportunity for participants to express their preferences, opinions, and any additional comments

or suggestions related to their experiences with beauty care retailer brands in Vietnam.

- There was no specific hypothesis addressed in this section. However, participants' feedback and comments might provide valuable insights for future research or analysis.

3.7. Research Design Limitations

Despite the planning and execution of a research design, it was imperative to acknowledge and address potential limitations that might impact the study's outcomes and generalizability. Identifying and discussing these limitations was a crucial aspect of maintaining transparency and ensuring the credibility of the research.

One of the primary limitations was the sample size and its representativeness. Although the research had a large sample size of 500 participants, it still faced the probabilities of the limit of the generalizability of findings to a broader population. Moreover, there might be biases in the selection process of participants, particularly if the sample was not randomly chosen. Selection bias could impact the external validity of the study, making it challenging to extend findings beyond the chosen sample.

The accuracy and reliability of measurement instruments utilized in the research might pose limitations. If the instruments lacked validity or if there were measurement errors, it could compromise the integrity of the data collected and subsequently affect the study's internal validity.

Practical constraints such as time, budget, and access to resources might limit the extent and depth of the research. These constraints could impact the breadth of data collection and the thoroughness of the analysis. One of the constraints was in the development of the research survey. Due to conducting online, the survey was designed

to keep the main research questions while ensuring the efficiency in answering the survey from the participants.

By candidly addressing these limitations, researcher contributed to the scholarly discourse on the study, fostering a more understanding of the research findings. Moreover, acknowledging limitations provided a foundation for future research to build upon and refine methodologies, ultimately advancing the collective knowledge in the field.

3.8. Conclusion

With the research goal of the model being to determine the impact of omnichannel retailing on customers' purchase decision journey in the consumer goods sector, Chapter 3 used a combination of both qualitative and quantitative research methods, in which the Qualitative research methods were used through experts to identify important retail mix elements in omnichannel retailing in Vietnam. Then, these retail mix elements would be used in quantitative research to evaluate the impact on consumer purchase decisions in Vietnam. In quantitative research, statistical methods such as descriptive statistics, data visualization, correlation, and multivariate regression would be used to search for significant relationships between integration levels, retail mix elements, and purchase intention. This would be the theoretical framework of research methods for the author to apply in analyzing the model and providing research results for the thesis.

CHAPTER IV:

RESULTS

4.1. Qualitative research – Expert interviews

After conducting in-depth interviewed with 30 experts in the field of omnichannel retailing in Vietnam, the study identified three key elements within the retailing mix that significantly impacted customers' purchase decision journey in the beauty care category. These elements were product, price, and service. The following table would summarise the keywords spoken and mentioned by the experts with dedication.

Table 2. *Keyword summary. Source: Author's calculation.*

Key words	**No. of word counts**
Product	72
Price or pricing	38
Service or customer service	45
Promotion or discount or offer	47
Brand	19
Convenience	14
Review	11
Experience	30
Delivery	18
Availability	11
Quality or product quality	21
Trust	18

Loyalty	19
Assortment or portfolio	11
Offline and online store design	5
Shipping	5
Personalized	6
Return	7
Rating	4
Order tracking	1
Payment	3

In analyzing the table of key words mentioned by the experts, several observations emerged. The term "product" was the most frequently mentioned keyword with 72 instances. This high frequency highlighted the considerable emphasis placed on product-related aspects. By further exploring what meaning behind “product” or “brand”, experts constantly mentioned that the product information, the accuracy of product information online or in physical stores, the uniqueness of products that retailers sell played important role to the decision making of customers from their experiences.

The second most important element that experts commonly mentioned was around "pricing” and "promotion", "discount", “offer” collectively appeared 38 and 47 times respectively that emphasized the importance of this factor in purchase decision on omnichannel strategy development. This indicated a considerable focus on pricing strategies, reflecting the experts' consideration of how competitive and transparent pricing influenced in the context of omnichannel retailing. Further elaborating on pricing and promotion elements, experts mentioned about the frequency of promotion, the

transparency of promotion across channels, the payment options that retailers offeres and benefits from the loyalty program that retailers brought to customers could significantly influence the purchase decision.

The next keyword "service" or "customer service" was mentioned 45 times, emphasizing the pivotal role of customer service in the omnichannel experience. This included factors such as responsiveness, helpfulness, and overall customer support from the retailers. The result of customer service is customer experience as experts shared. “Experience or customer experience” were mentioned with 30 times with deeper clarification that customers these days expected more personalization, more personalized product recommendation, more service enthusiasm from the sales people across channels and also customer support after the purchase such as return policy or order tracking.

As the summary, the experts highlighted the importance of a diverse and high-quality product range in omnichannel retailing. Customers were inclined to engage more when presented with a wide selection of beauty care products, catering to different preferences and needs.

The pricing and promotion strategy emerged as a crucial factor affecting customers' decision-making. Participants emphasized the need for competitive and transparent pricing across various channels to enhance customer trust and loyalty in the beauty care sector.

The quality of service offered in the omnichannel environment was identified as a critical determinant of customers' satisfaction and decision-making. Experts emphasized the significance of seamless and personalized customer experiences, including efficient order fulfillment, responsive customer support, and convenient delivery options.

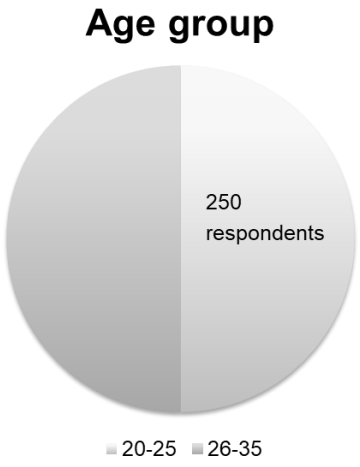
These three retailing group elements, namely Product, Price, and Service, were consistently highlighted by the interviewed experts as pivotal components shaping the

omnichannel retail landscape in the beauty care category in Vietnam. Further quantitative analysis through surveys would provide additional insights and validate these qualitative findings.

4.2. Descriptive statistics

4.2.1. Age group

The study had the quota of equal sample in age group, with 50% of participants were from 20 to 25 years old and the remaining 50% were from 26 to 35 years old. The quota was set that way to understand the different behaviours between 2 age groups. From the expert' interviews, the author recorded that beauty needs are generally changed with age and purchase intention might be impacted by age. By splitting into 2 age groups, the analysis would dicover different patterns with different age groups.



4.2.2. Marital status

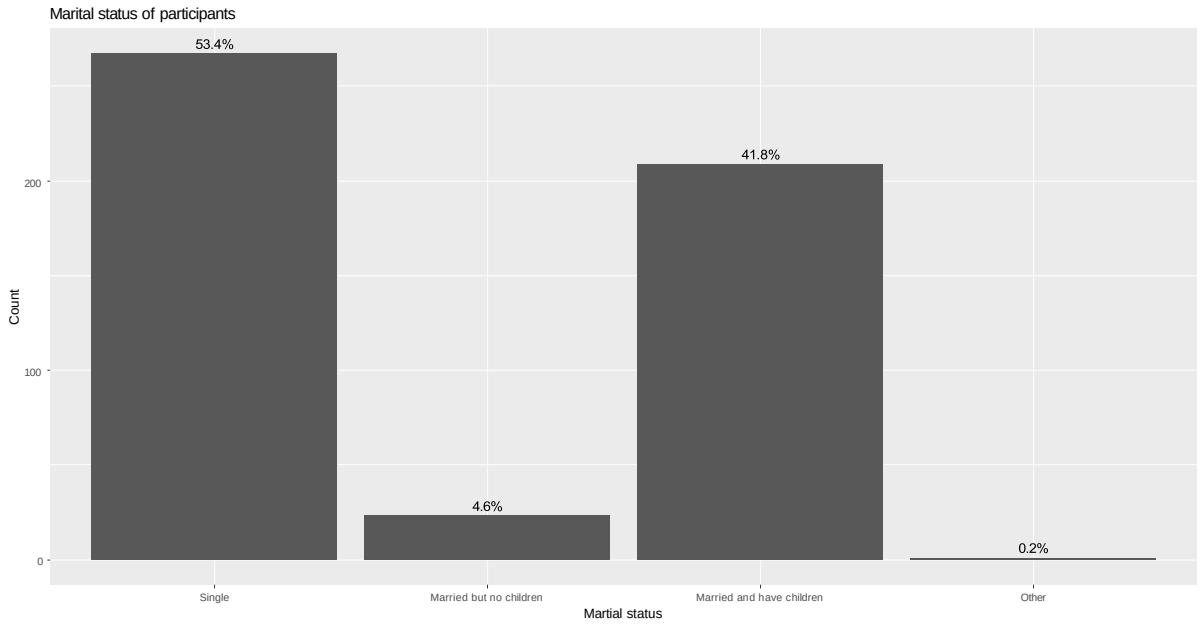


Figure 11. Marital status of participants. Source: Author's calculation.

The figure above detailed the marital status distribution of the surveyed population, presenting the information in terms of count and percentage with no forced quota by each group. Over half of the respondents (53.4%) were identified as single. Similarly, a considerable portion of the surveyed population, accounting for 41.8%, fell into the category of being married and having children. This finding emphasized the prevalence of family settings within the sample, with a significant number of respondents experiencing both marriage and parenthood.

A smaller percentage, specifically 4.6%, consisted of individuals who were married but did not have children. The "Other" category was the least represented, comprising only 0.2% of the respondents. These 2 groups were not analyzed in detail as it did not have sufficient sample size.

In summary, the table provided valuable insights into the diverse marital statuses present among the respondents. The dominance of single individuals, coupled with a

considerable representation of married individuals with children, offered a novel perspective on the demographic composition of the surveyed population.

4.2.3. Employment status

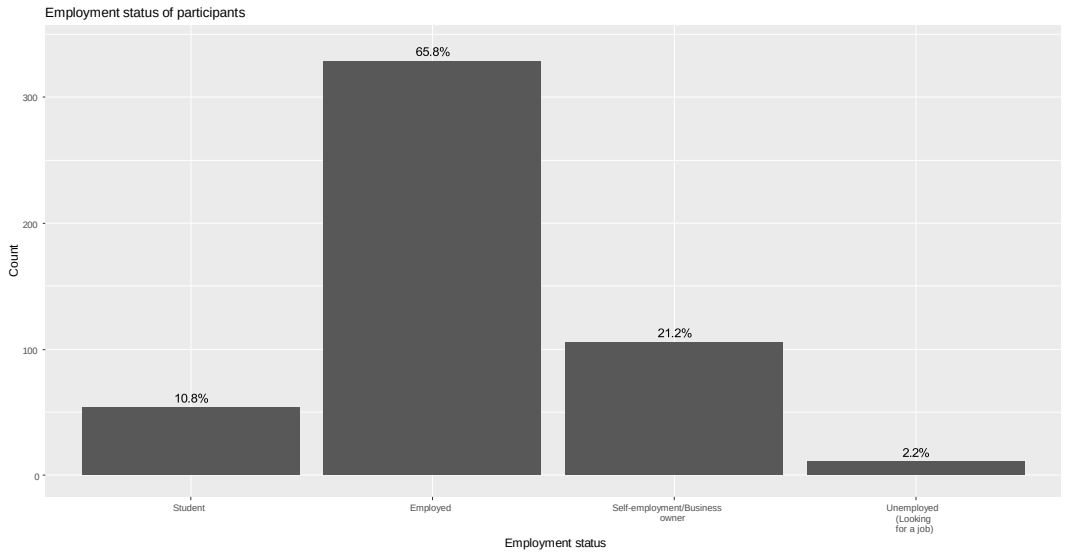


Figure 12. Employment status of participants. Source: Author's calculation.

The figure above presented an analysis of the employment status of the surveyed population, indicating the count and percentage distribution across various categories. Approximately two-thirds of the respondents (65.8%) fall into the category of being employed, signifying a predominant presence of individuals actively engaged in formal employment.

A significant portion of the surveyed population, constituting 21.2%, identified as self-employed or business owners. Students made up 10.8% of the surveyed population, reflecting a portion of individuals focused on educational pursuits. This category highlighted the coexistence of both students and employed individuals within the sampled group.

Conversely, a smaller percentage of respondents, specifically 2.2%, were unemployed and actively looking for a job. While comparatively less prevalent, this

category highlighted the presence of individuals in the job-seeking phase within the surveyed population.

In summary, the employment status analysis revealed a diverse composition within the surveyed group, with a substantial representation of employed individuals and a notable presence of self-employed or business owners.

4.2.4. Monthly average payment

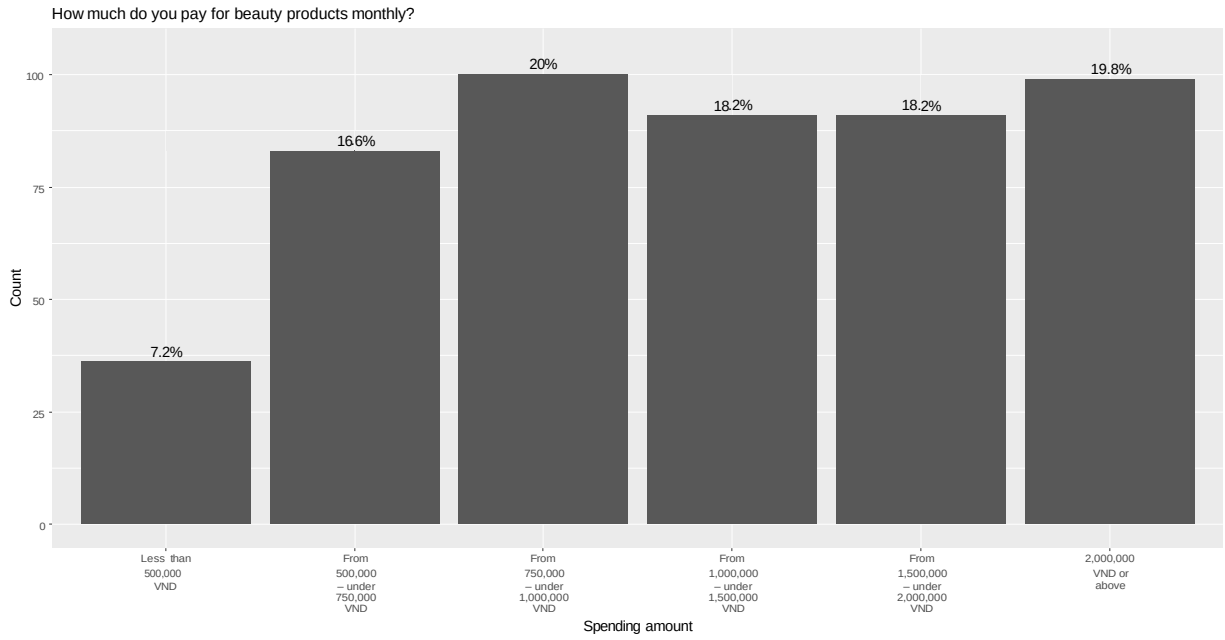


Figure 13. Spending expenditure of participants. Source: Author's calculation.

The figure provided insights into the spending expenditure habits of the surveyed customers, presenting the count and percentage distribution across various spending categories. The data revealed a diverse range of spending behaviors within the sampled population. A notable portion of respondents, comprising 7.2%, fell into the category of spending less than 500,000 VND. This group represented individuals with relatively conservative spending habits, possibly focused on essential or budget-conscious purchases.

The spending bracket from 500,000 VND to under 750,000 VND constituted 16.6% of the respondents, indicating a larger segment that allocated slightly more to their expenditures but remained within a moderate range. Moving up the spending scale, the categories from 750,000 VND to under 1,000,000 VND and from 1,000,000 VND to under 1,500,000 VND each accounted for 20.0% and 18.2%, respectively. These segments highlighted a considerable proportion of customers willing to allocate a moderate to higher budget for their expenditures, potentially encompassing a broader range of goods and services.

The spending ranged from 1,500,000 VND to under 2,000,000 VND mirrored the same percentage (18.2%) as the previous category, indicating a consistency in the proportion of customers willing to spend within this range. A significant finding was that 19.8% of the surveyed customers allocate 2,000,000 VND or above for their expenditures. This suggested the presence of a relatively sizable segment with a higher spending capacity, potentially engaging in more extensive or premium purchases.

4.2.5. Buying frequency

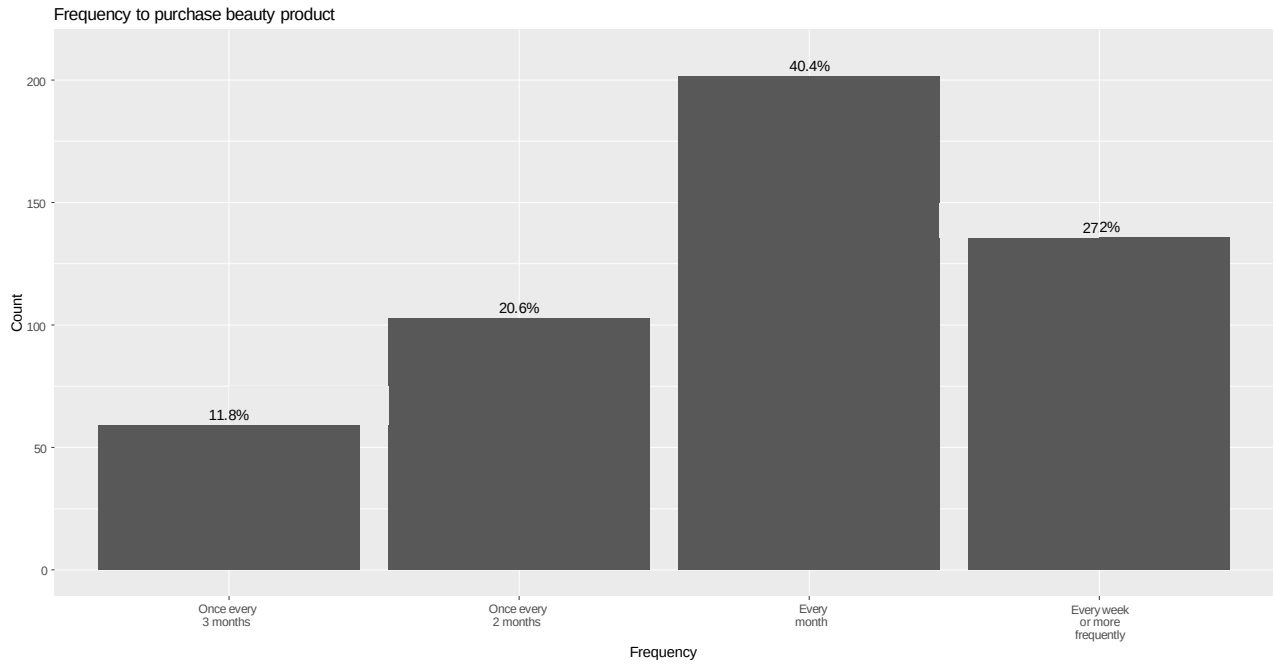


Figure 14. Buying frequency of participants. Source: Author's calculation.

The figure above provided insights into the frequency of beauty care product purchases among the surveyed customers, presenting the count and percentage distribution across various frequency categories. A significant segment, constituting 11.8% of the respondents, indicated a less frequent purchase pattern, opting to buy beauty care products once every 3 months. This category suggested a more restrained approach to product consumption, potentially driven by factors such as product longevity or less frequent usage.

Moving to a more regular purchasing frequency, 20.6% of the respondents indicated a preference for buying beauty care products once every 2 months. This category suggested a more consistent engagement with beauty care items, possibly driven by the desire for a regular refresh of products.

A significant portion of the surveyed population, comprising 40.4%, engaged in monthly beauty care product purchases. This suggested a considerable segment of customers who prioritized regular replenishment of beauty care items, possibly influenced by product usage cycles or changing preferences.

A significant finding was that 27.2% of the respondents purchase beauty care products every week or even more frequently. This higher frequency category indicated a dedicated and frequent engagement with beauty care items, potentially influenced by factors such as a beauty routine, product experimentation, or a strong interest in staying updated with beauty trends.

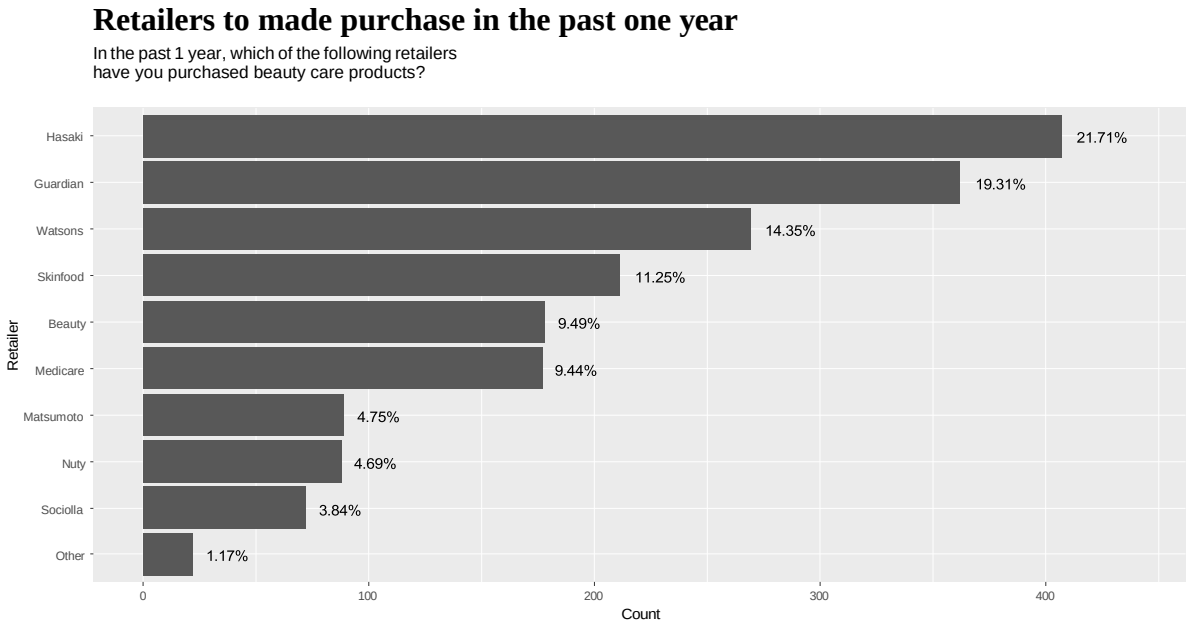


Figure 15. Market share within the sample. Source: Author's calculation.

The figure above provided insights into the choices of retailers made by customers for beauty care product purchases within the last year. The data was presented in terms of count and percentage distribution across various retailers. The analysis revealed distinct preferences among the surveyed customers, shedding light on the popularity of specific retailers in the beauty care market. Hasaki emerged as the leading

choice, with 21.71% of customers making their beauty care purchases from this retailer. This signified a substantial customer base opting for Hasaki, indicating the retailer's strong presence and appeal within the market.

Following closely was Guardian, capturing 19.31% of the customers' choices. Guardian's significant share suggested a competitive position in the beauty care retail landscape, with a considerable number of customers preferring this retailer for their purchases. Watsons, with a percentage of 14.35%, held a notable position as well. The data indicated a sizable portion of customers favoring Watsons for their beauty care product needs, contributing to the retailer's significance in the market.

Skinfood and Beauty follow, each with 11.25% and 9.49%, respectively. These percentages highlighted a considerable customer base choosing these retailers, indicating their attractiveness and effectiveness in meeting customer demands. Medicare, Matsumoto, Nuty, and Sociolla collectively accounted for varying but significant percentages, ranging from 9.44% to 3.84%. Each retailer represented a distinct choice for a segment of customers, showcasing the diversity in preferences within the surveyed population. The "Other" category, with a percentage of 1.17%, comprised customers who opted for retailers not explicitly listed in the table.

In summary, the analysis of retailer choices for beauty care product purchases highlighted the dominance of certain retailers like Hasaki and Guardian, along with a diverse array of preferences across other brands.

Top choice buying retailers

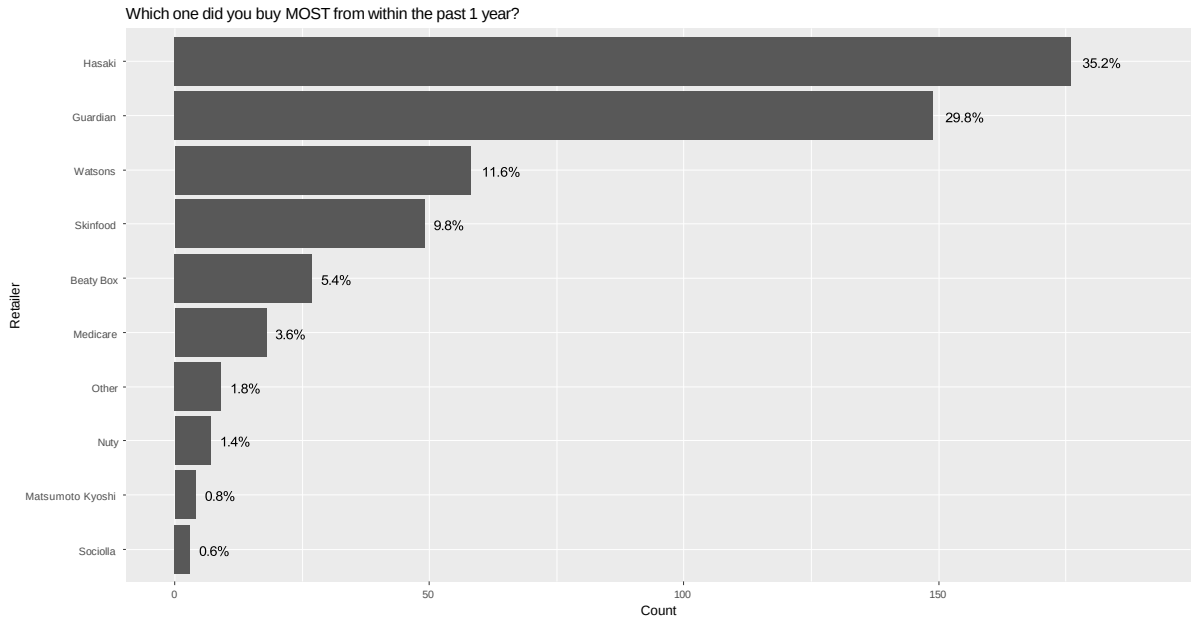


Figure 16. Top choice buying retailers. Source: Author's calculation.

The analysis of the results from the question "Which retailer did you buy the MOST from within the past 1 year?" revealed patterns and preferences among the survey participants. The data provided insights into the consumer behavior and retailer choices within the given timeframe.

Most respondents, constituting 35.20%, reported purchasing the most from Hasaki, making it the most prevalent choice among the options presented. This suggested a significant market share for Hasaki within the surveyed population. Following closely, Guardian emerged as the second most frequented retailer, with 29.80% of participants indicating it as their primary choice. These two retailers, Hasaki and Guardian, together commanded a considerable portion of the market, indicating their popularity among consumers.

Watsons secured the third position, with 11.60% of respondents favoring it as their primary retailer in the past year. While its percentage was notably lower than the top

two, it still represented a considerable portion of the market share, highlighting Watsons as a significant player in the retail landscape for beauty care products.

Skinfood and Beauty Box garnered 9.80% and 5.40%, respectively, showcasing a diverse range of preferences among consumers. It was evident that participants exhibited varying purchasing behaviors, distributing their choices among multiple retailers. The presence of a range of options highlighted the competitive nature of the beauty care retail market.

Medicare, Nuty, Matsumoto Kyoshi, and Sociolla collectively accounted for smaller percentages, ranging from 3.60% to 0.60%. While individually their market share might be limited, these retailers still played a role in catering to specific consumer segments or preferences.

From the research, the top three retailers “top choice buyers” were Hasaki, Guardian and Watsons with a significant proportion. Other retailers also appeared in the list; however, the proportion were much smaller than the top three.

4.2.6. Channel combinations

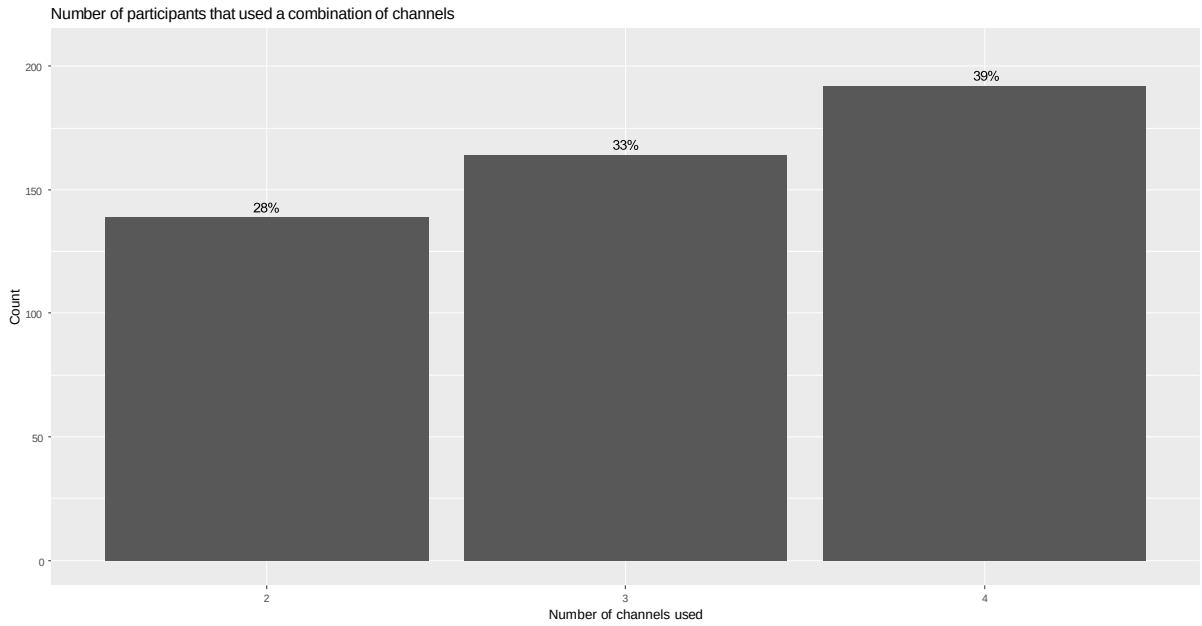


Figure 17. Channel combination counting. Source: Author's calculation.

The above figure showed the percentage of participants who used a combination of channels in this research. The study excluded participants who used only one type of channel. The four channels of retailing in this study were brick-and-mortar store, website, application, and e-commerce-platform. Among the respondents, 28% reported utilizing two channels for their beauty care product purchases. This suggested a large portion of consumers prefer a dual-channel approach, possibly leveraging a combination of online and offline channels or specific platforms within these categories. Understanding this segment was crucial for retailers and marketers seeking to optimize their presence across diverse channels.

A significant portion of participants, constituting 33%, indicated utilizing three channels for their beauty care purchases. This finding emphasized the complexity of consumer behavior, with a considerable number of individuals engaging with a diverse set of channels. This three-channel preference might involve a mix of online platforms,

physical stores, and potentially social media or other emerging channels. Retailers aiming to reach this segment effectively needed to consider the integration and consistency of their presence across multiple channels.

Most respondents, accounting for 39%, reported using four channels for their beauty care product purchases. This finding highlighted a prevalent trend of consumers embracing a comprehensive and diverse approach to their shopping experience. The four-channel preference indicated a high level of engagement across various online and offline platforms, showcasing a sophisticated and digitally connected consumer base.

One note for this data visualization was that each category of channel combination was excluded from the others. In other words, people who used four channels were not included in the two or three channel combination. It was a good sign that Vietnamese customers were familiar with a combination of all four channels.

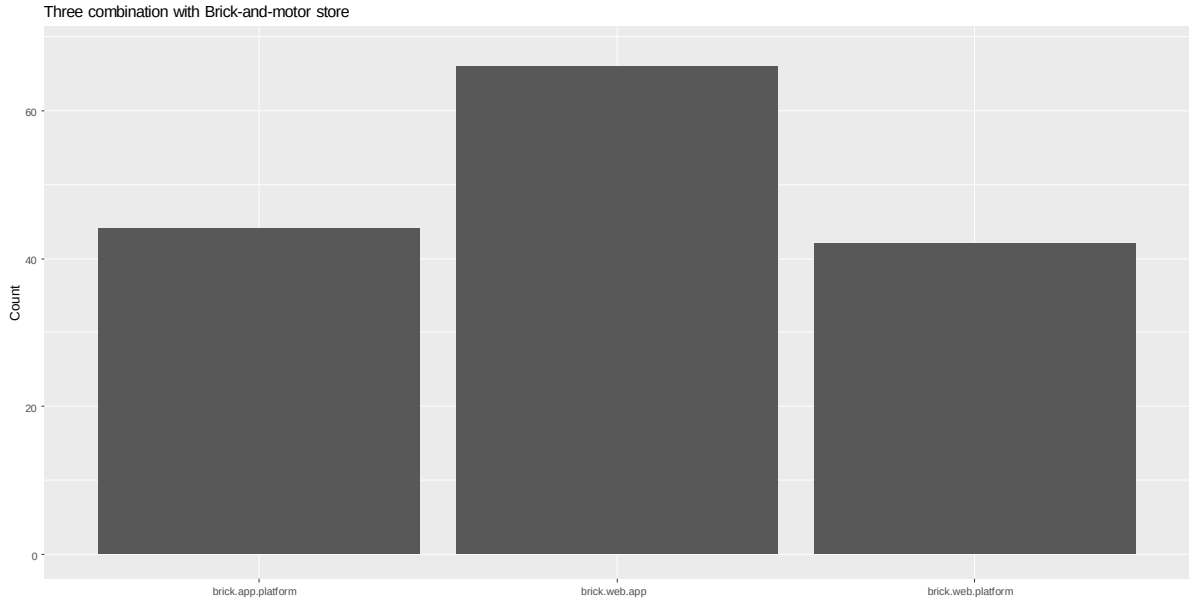


Figure 18. Channel combination with brick-and-mortar store statistics. Source: Author's calculation.

The study wanted to examine the combination between brick-and-mortar channels with other two channels. The brick-and-mortar was still the most popular retail channel in

Vietnam for consumer goods. Understanding the most selected choices on channel mix could help retailers define their channel strategy under limited resources.

4.3. Hypothesis one: There was a significant relationship between the omnichannel integration level with the purchase intention.

4.3.1. Integration measurement

As explained in the literature review, the study used the classification and measurement from Gasparin et al. (2022) to separate the integration levels into two aspects: Connectivity and Consistency. Survey participants would be asked to give their score over the Connectivity and Consistency for each retailer. The retailers were those that participants purchased in the last one year. There were at most three retailers to score, based on the top three retailers that the customer purchased the most, based on another question in the questionnaire.

For the integration level measurement, the research used the formula:

$$Integration = Connectivity\ x\ Consistency.$$

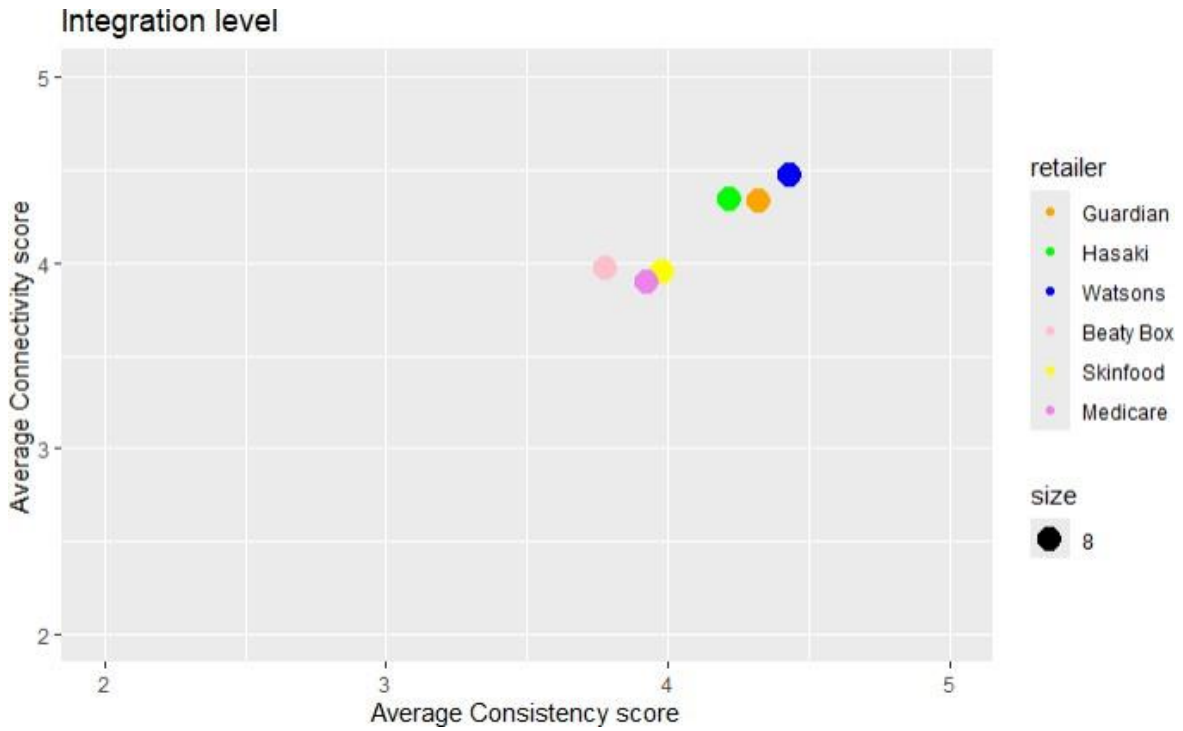


Figure 19. Integration levels of each retailer. Source: Author's calculation.

Figure 15 illustrated the integration levels of each retailer. It could be divided into two groups: Guardian, Hasaki, and Watsons compared to Beauty Box, Skinfood, and Medicare. Watsons seemed to take the highest score in both connectivity and consistency.

4.3.1. Correlation

Because Connectivity, Consistency, and Purchase Intention were measured in ordinal scale, it was better to use Spearman correlation test. The correlation coefficient would be calculated with four datasets. The first dataset was a sum of all the three choices from participants. Each participant was required to assess the integration levels from one to three retailers. The first dataset would combine the three assessments into one dataset. The three other datasets separated from most choice, second choice, and third choice.

Table 3. Correlation coefficients of Integration ~ Purchase intention for all data. Source: Author's calculation.

Variable	Correlation coefficient	p-value
Connectivity	0.4866659	1.19E-63
Consistency	0.4804109	7.59E-62
Integration	0.5499621	3.34E-84

The table presented correlations of coefficients and associated p-values for three variables: Connectivity, Consistency, and Integration with Purchase intention. These coefficients provided insights into the strength and direction of the relationships between these variables. Overall, the correlation coefficients were moderately positive, which showed that each variable had a positive relationship with Purchase intention. The associated p-value for each correlation coefficient was all smaller than 0.05, indicated that those correlation were statistically significant, providing confidence in the observed relationship between Connectivity, Consistency, Integration with Purchase intention.

Integration revealed the highest correlation coefficient among the variables, standing at 0.5500. This indicated a stronger positive relationship with the measured outcome compared to Connectivity and Consistency separately. The remarkably low p-value of 3.34E-84 emphasized the statistical significance of the observed correlation, underscoring the importance of Integration in influencing the measured outcome.

Considering the choice order, the study had the following correlation coefficient between integration levels and purchase intention as follow.

Table 4. Correlation coefficients of Integration ~ Purchase intention for choice order dataset. Source: Author's calculation.

Choice order	Variable	Correlation coefficient	p_value
First retailer	Connectivity	0.4759273	4.02E-29
First retailer	Consistency	0.4257778	4.84E-23
First retailer	Integration	0.5256669	3.11E-36
Second retailer	Connectivity	0.5213745	3.67E-25
Second retailer	Consistency	0.5371847	6.92E-27
Second retailer	Integration	0.5900161	2.32E-33
Third retailer	Connectivity	0.4937906	6.34E-15
Third retailer	Consistency	0.5161619	2.23E-16
Third retailer	Integration	0.5634673	7.85E-20

The presented table outlined correlation coefficients and associated p-values across three variables—Connectivity, Consistency, and Integration—across different choice orders of retailers. The data aimed to elucidate the relationships between these variables concerning participants' preferences for retailers at varying tiers.

For the first retailer choice order, Connectivity exhibited a correlation coefficient of 0.4759, indicating a moderately positive relationship. The associated p-value of 4.02E-29 signified the statistical significance of this correlation, suggesting that as Connectivity increased, participants tended to favor the first retailer more frequently. Similarly, Consistency and Integration showed positive correlations of 0.4258 and 0.5257, respectively, with both relationships being statistically significant (p-values of 4.84E-23 and 3.11E-36, respectively). These findings suggested that participants who prioritized

Connectivity, Consistency, and Integration tended to choose the first retailer more frequently.

Moving to the second retailer choice order, Connectivity, Consistency, and Integration all displayed positive and statistically significant correlation coefficients of 0.5214, 0.5372, and 0.5900, respectively, with p-values ranging from 3.67E-25 to 2.32E-33. These results suggested a robust and positive association between the three variables and the likelihood of selecting the second retailer as the preferred choice.

For the third retailer choice order, Connectivity, Consistency, and Integration also exhibited positive correlation coefficients of 0.4938, 0.5162, and 0.5635, respectively, with corresponding p-values ranging from 6.34E-15 to 7.85E-20. These results indicated that participants valuing Connectivity, Consistency, and Integration were more likely to choose the third retailer as their preferred option.

In summary, it could be concluded connectivity, consistency, integration had positive relationship with Purchase intention, regarding the order of choice. In other words, if a customer chose a certain retailer in their top three purchase stores, there would be a positive relationship between integration levels and purchase intention.

4.3.2. Multivariate regression

Multivariate regression would be used to analyze the impact of Connectivity and Consistency over Purchase intention. There were four models associated with four datasets explained in the previous section.

Table 5. Multivariate regression results of Purchase intention ~ Connectivity + Consistency. Source: Author's calculation.

	All assessments	**First retailer**	**Second retailer**	**Third retailer**
Intercept	2.49001	2.5705	2.20089	2.74658
	*<2e-16***	*<2e-16***	*<2e-16***	*<2e-16***
Connectivity coefficient	0.28216	0.30875	0.26666	0.24143
	*<2e-16***	*1.92e-12***	*3.25e-08***	*9.58e-05***
Consistency coefficient	0.1902	0.15704	0.25527	0.17408
	*1.04e-12***	*0.000154***	*3.62e-08***	*0.000475***
F-statistic	165.1 on 2 and 1049 DF	69.43 on 2 and 488 DF	65.66 on 2 and 338 DF	36.73 on 2 and 217 DF
	< 2.2e-16	*< 2.2e-16*	*< 2.2e-16*	*1.82E-14*
R-squared	0.2394	0.2215	0.2798	0.2529
Adjusted R-squared	0.238	0.2183	0.2756	0.246

The multivariate regression results table provided valuable insights into the relationships between the predictor variables (Connectivity and Consistency) and the dependent variable across different retailer ranks (All assessment, First retailer, Second retailer, Third retailer). The analysis included intercepts, coefficients, statistical significance, F-statistics, and R-squared values for each model.

Beginning with the intercepts, they represented the baseline values of the dependent variable when the predictor variables were zero. In all models, the intercepts

were statistically significant at $p < 2e\text{-}16$, indicating that even when the predictor variables were absent, there was a significant inherent value in the dependent variable for each retailer rank. However, this figure was slow. The intercept smaller than 3 (Neutral in purchase intention) meant that if a customer saw no connectivity or consistency in a retailer, they would not re-purchase.

Moving to the connectivity coefficient, its positive values across all models (ranging from 0.24143 to 0.30875) indicated a positive relationship between Connectivity and the dependent variable. The associated p-values were highly significant ($p < 2e\text{-}16$ for all models), confirming the statistical significance of this relationship. This suggested that as Connectivity increased, the likelihood of re-purchase from a retailer also increased.

Similarly, the consistency coefficient, with positive values across all models (ranging from 0.15704 to 0.25527), showed a positive relationship with the dependent variable. The p-values were highly significant (ranging from 0.000154 to 3.62e-08), reinforcing the importance of Consistency in influencing the retailer choice.

The F-statistics, with highly significant values (all $p < 2.2e\text{-}16$), indicated that the overall models were statistically significant. This implied that at least one of the predictor variables (Connectivity or Consistency) had a significant effect on the dependent variable for all retailer ranks. The degree of freedom suggested the size of the sample in each model. It was understandable that all data would include the most cases and the degree of freedom decreased throughout each model.

The R-squared values provided insights into the proportion of variance in the dependent variable explained by the predictor variables. Across all models, R-squared values ranged from 0.2215 to 0.2798, suggesting that Connectivity and Consistency collectively explained a considerable portion of the variability in retailer choice. The

Adjusted R-squared was another goodness of fit criterion to evaluate the models. However, because each model only included two variables. The R-squared could be used to compare models. However, the difference was quite small.

One important point could be seen that in every model, the connectivity had larger impact than the consistency over the purchase intention. The magnitude of difference was different in each model. In the first retailer model, the difference between two variables was nearly double, indicating that customers could increase their purchase intention for their first choice if they increased the connectivity within the omnichannel retailing of that retailer.

4.4. Hypothesis two: Retail mix elements had significantly different effects on purchase intention.

4.4.1. Coding for each statement of the retail mix assessment

The retail mix element section in the questionnaire used the Likert 5-point scale question to ask about the impact of each retail mix element on the buying decision within the omnichannel context from participants. The following table presented the statement with associated coding in the data analysis process.

Table 6. Retail mix elements.

Group	Retail mix element	Variable coding
Product	The uniqueness or exclusivity of a beauty care product	product_uniq
	The availability of detailed product information, such as ingredient lists and usage instructions	product_info
	The accuracy of product information	product_accuracy

Price & Promotion	Frequency of promotions	price_frequency
	The transparency of pricing information	price_transparency
	The availability of flexible payment options (e.g., installment plans, online payment methods)	price_payment
	Loyalty programs, such as point accumulation and rewards	price_loyalty
Customer Service	The level of enthusiasm of the consultants and support staff	service_enthusiasm
	The availability to personalized recommendations, purchase recommendations from consultants, support	service_personalise
	Level of interest, post-purchase support	service_support

4.4.2. Statistics summary

Table 7. Summary statistics of retail mix elements. Source: Author's calculation.

Variable	Statement	low	neutral	high	mean	sd
price_frequency	Frequency of promotions	5.4	9	85.6	4.27	0.92672
price_loyalty	Loyalty programs, such as point	8	12.4	79.6	4.06	0.98912

	accumulation and rewards					
price_payment	The availability of flexible payment options (e.g., installment plans, online payment methods)	8.2	20.2	71.6	3.986	1.03728
price_transparency	The transparency of pricing information	5	7.4	87.6	4.43	0.91585
product_accuracy	The accuracy of product information	6.6	9.4	84	4.288	0.99752
product_info	The availability of detailed product information, such as ingredient lists and usage instructions	9.6	11.2	79.2	4.102	1.04776
product_uniq	The uniqueness or exclusivity of a beauty care product	13	12.8	74.2	3.888	1.11262

service_enthusiasm	The level of enthusiasm of the consultants and support staff	6.4	12.6	81	4.198	0.9822
service_personalise	The availability to personalized recommendations, purchase recommendations from consultants, support	8.2	15.6	76.2	4.028	1.01847
service_support	Level of interest, post-purchase support	9	11.2	79.8	4.072	1.03002

The provided table described Likert-scale responses related to various statements reflecting customer perceptions in the beauty care sector. Each statement was associated with three Likert-scale categories: low, neutral, and high, accompanied by mean and standard deviation values. “Low” comprised of “Strongly disagree” and “Disagree” while “high” comprised of “Agree” and “Strongly agreed”.

Overall, each variable had a larger agreement proportion than the combination of neutral and disagreement parts. However, each variable differed in the proportion of agreement. "Transparency of pricing information" received a "high" rating from 87.6% of respondents. This high percentage suggested that consumers highly value clear and

transparent pricing information, emphasizing the importance of openness in pricing strategies for beauty care products. For the "Frequency of promotions" attribute, a notable 85.6% of respondents rated it as "high," indicating a strong positive sentiment towards the availability of frequent promotions. This suggested that a significant proportion of consumers highly valued promotional activities in their beauty care purchase decisions. The loyalty program and payment methods although received high agreement, however, lower than the other two aspects.

Regarding the product aspects, the accuracy of information seemed to take the highest interest from customers with 84% of agreement, higher than the other two. The mean value of this variable was also high with 4.3 points. The uniqueness or exclusivity of a beauty care product received the lowest proportion agreement amongst the three and the highest disagreement, implicating that the exclusivity of a beauty care product might not be important in this industry.

Service operations received the same importance from participants with nearly proportion in terms of agreement and disagreement. The mean values were also like each other.

Comparing 10 variables at the same time, price transparency had the highest mean value (4.430), implicating that customers care more about the price transparency when purchasing in omnichannel environments.

In conclusion, the analysis of consumer perceptions across these variables illuminated the key drivers influencing beauty care retail choices. From pricing considerations to the importance of accurate product information and the role of personalized service, retailers could use these insights to tailor their strategies and enhance the overall customer experience in the competitive beauty care sector.

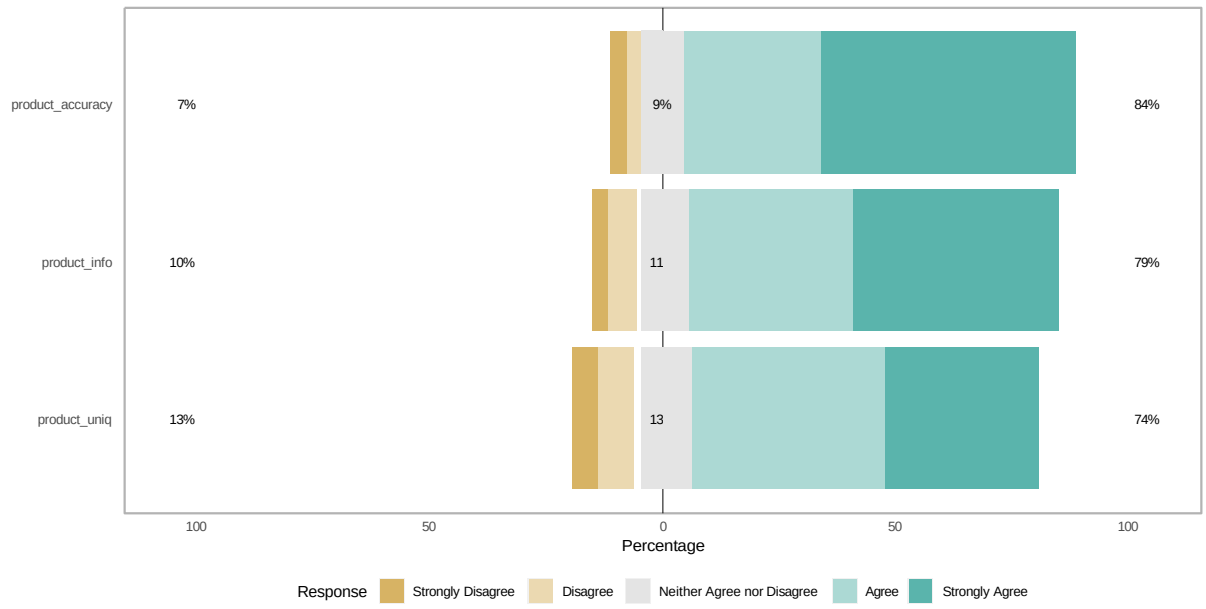


Figure 20. Visualization for Product elements. Source: Author's calculation.

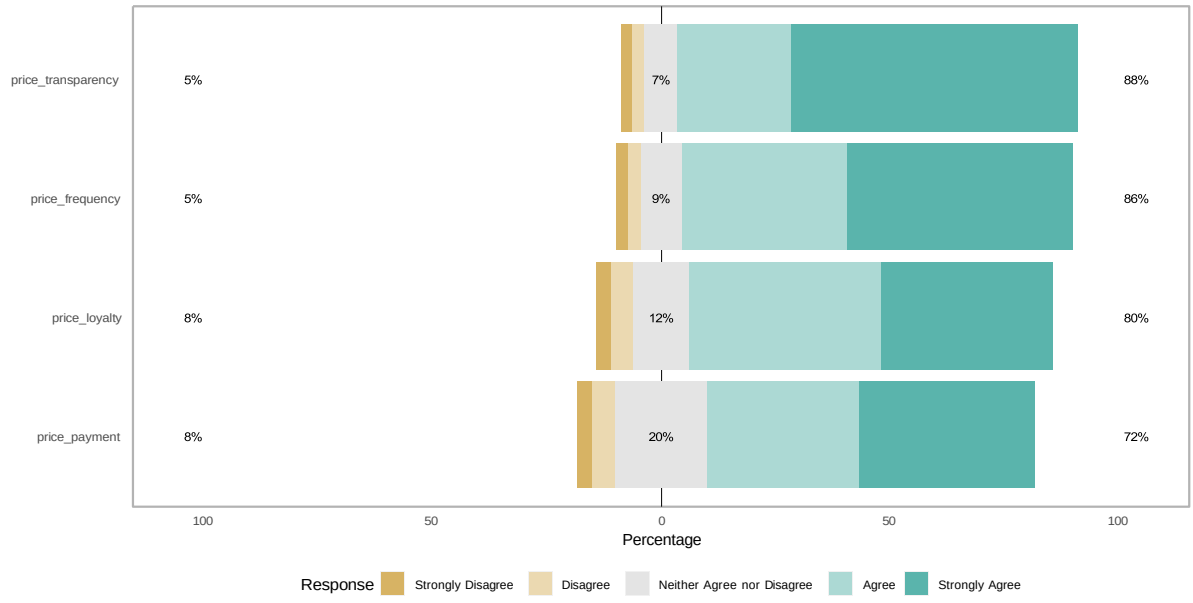


Figure 21. Visualization for Price elements. Source: Author's calculation.

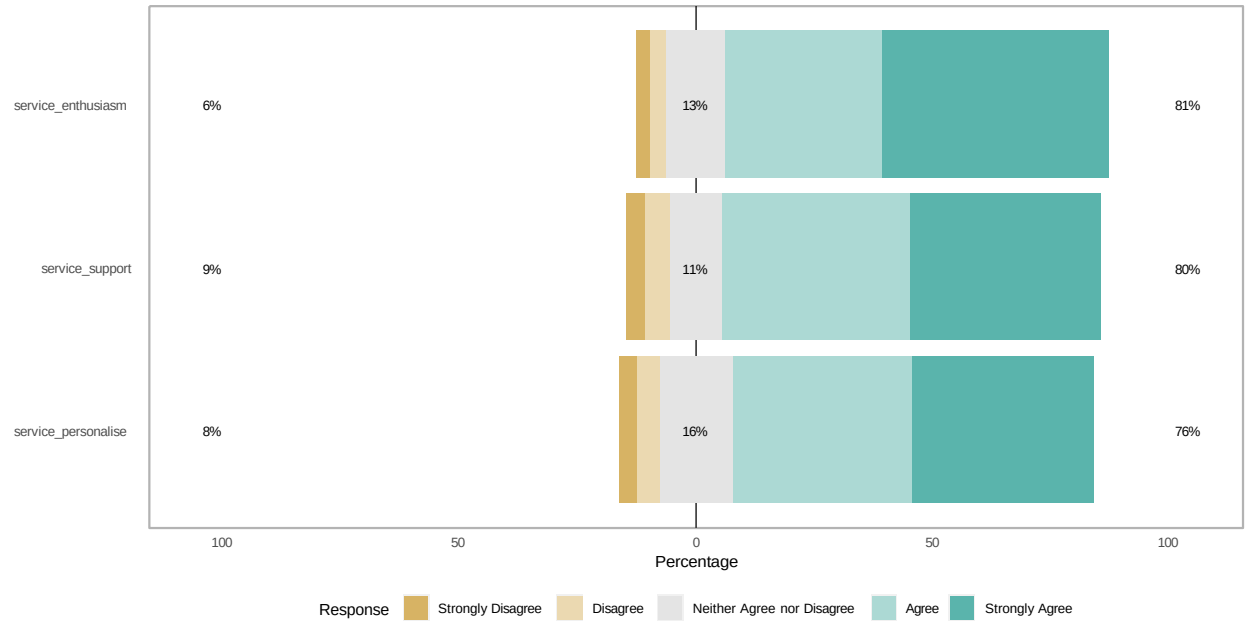


Figure 22. Visualization for Service elements. Source: Author's calculation.

4.4.3. Reliability test

Measurements for each group were reliability based on Cronbach's Alpha test. Cronbach's Alpha ranged between 0 and 1, with higher values indicating that the survey or questionnaire was more reliable.

Table 8. Reliability test. Source: Author's calculation.

Reliability Statistics	
Cronbach's Alpha	**N of Items**
.897	10

Table 9. Item-total statistics of Cronbach's Alpha test. Source: Author's calculation.

Item-Total Statistics				
	Scale Mean if Item Deleted	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**
product_uniq	37.4340	42.258	.626	.888
product_info	37.2200	42.180	.681	.884
product_accuracy	37.0340	43.139	.642	.886
price_frequency	37.0520	44.695	.564	.891
price_transparency	36.8920	44.141	.622	.888
price_payment	37.3360	43.374	.593	.890
price_loyalty	37.2620	42.787	.679	.884
service_enthusiasm	37.1240	42.914	.674	.884
service_personalise	37.2940	42.244	.700	.882
service_support	37.2500	42.793	.645	.886

The presented table offered reliability statistics, focusing on Cronbach's Alpha as a measure of internal consistency, and item-total statistics for ten items related to various aspects of customer perception in the beauty care sector.

The overall reliability of the scale, as indicated by Cronbach's Alpha, was robust at .897, suggesting a high level of internal consistency among the items. This implied that the ten items collectively measure a coherent construct related to customer perceptions in the beauty care domain.

Examining the item-total statistics provided additional insights into the impact of each item on the overall reliability of the scale. The Scale Mean if Item Deleted represented the mean score on the scale if a particular item was removed. The Scale Variance if Item Deleted indicated the variance in scores on the scale if a specific item was excluded.

4.4.4. Correlation matrix

Table 10. Correlation matrix of Purchase intention ~ Retail mix elements. Source: Author's calculation.

Correlation matrix using Spearman's method		**Purchase intention**
product_uniq	Correlation Coefficient	.263**
	Sig. (2-tailed)	<.001
product_info	Correlation Coefficient	.286**
	Sig. (2-tailed)	<.001
product_accuracy	Correlation Coefficient	.246**
	Sig. (2-tailed)	<.001
price_frequency	Correlation Coefficient	.151**
	Sig. (2-tailed)	<.001
price_transparency	Correlation Coefficient	.254**
	Sig. (2-tailed)	<.001
price_payment	Correlation Coefficient	.260**
	Sig. (2-tailed)	<.001
price_loyalty	Correlation Coefficient	.218**
	Sig. (2-tailed)	<.001

service_enthusiasm	Correlation Coefficient	.177**
	Sig. (2-tailed)	<.001
service_personalise	Correlation Coefficient	.271**
	Sig. (2-tailed)	<.001
service_support	Correlation Coefficient	.183**
	Sig. (2-tailed)	<.001

The correlation matrix provided valuable insights into the relationships between various variables, specifically focusing on their correlation with "Purchase Intention" in the beauty care sector.

Beginning with "product_uniq," there was a statistically significant positive correlation of .263 with "Purchase Intention" ($p < .001$), suggesting that customers who perceived uniqueness or exclusivity in beauty care products were more likely to have a higher purchase intention.

Similarly, "product_info" exhibited a positive correlation of .286 with "Purchase Intention" ($p < .001$), indicating that customers who value detailed product information, such as ingredient lists and usage instructions, were more inclined towards a higher purchase intention. "Product_accuracy" also showed a positive correlation of .246 with "Purchase Intention" ($p < .001$), suggesting that customers who perceived accuracy in product information were more likely to have a higher purchase intention.

Moving to pricing aspects, both "price_frequency" and "price_transparency" demonstrated positive correlations of .151 and .254, respectively, with "Purchase Intention" ($p < .001$). This implied that customers who appreciate frequent promotions and transparent pricing were more likely to express a higher purchase intention.

Likewise, "price_payment" and "price_loyalty" exhibited positive correlations of .260 and .218, respectively, with "Purchase Intention" ($p < .001$), indicating that customers valuing accuracy in product information and loyalty programs were more likely to have a higher purchase intention.

Among service-related factors, "service_enthusiasm" and "service_personalise" showed positive correlations of .177 and .271, respectively, with "Purchase Intention" ($p < .001$). This suggested that customers who perceived enthusiasm and personalized service from beauty care providers were more likely to express a higher purchase intention. Finally, "service_support" displayed a positive correlation of .183 with "Purchase Intention" ($p < .001$), implying that customers who receive strong post-purchase support were more likely to have a higher purchase intention.

In summary, the correlation matrix revealed significant positive relationships between various factors, including product uniqueness, information accuracy, pricing aspects, and service-related factors, and customers' purchase intentions in the beauty care sector. These findings provided valuable insights for businesses aiming to understand and enhance factors influencing customer purchase intentions.

4.4.5. Multivariate regression

Each retail mix element participated in the regression model as a dependent variable. The model was as follows:

$$Purchase\ intetnion = \beta_0 + \beta_1 \times product_{uniq} + \beta_2 \times product_{infor} + \beta_3 \times product_{accuracy} + \beta_4 \times price_{frequency} + \beta_5 \times price_{loyalty} + \beta_6 \times price_{transparency} + \beta_7 \times price_{payment} + \beta_8 \times service_{enthusiam} + \beta_9 \times service_{personalise} + \beta_{10} \times service_{supoprt}$$

Table 11. Model summary of Purchase intention ~ Retail mix elements. Source: Author's calculation.

R	R Square	Adjusted R Square	Std. Error of the Estimate
.359	.129	.110	.934

The model summary provided a snapshot of the regression model's performance in predicting the Purchase intention variable based on a set of predictors. The correlation coefficient (R) was 0.359, indicating a moderate positive linear relationship between the predictors and the dependent variable. The coefficient of determination (R Square) was 0.129, suggesting that approximately 12.9% of the variability in Purchase intention was explained by the predictors. The adjusted R Square, considering the number of predictors, was 0.110, indicating that about 11% of the variability was explained.

Table 12. F-test of Purchase intention ~ Retail mix elements. Source: Author's calculation.

	Sum of Squares	df	Mean Square	F	Sig.
Regression	61.850	10	6.185	7.087	<.001
Residual	418.900	480	.873		
Total	480.749	490			

The analysis of variance (ANOVA) table provided key insights into the overall performance of the regression model in predicting the dependent variable, Purchase intention, based on a set of predictors.

The F-statistic in the ANOVA table helped assess whether the overall model was statistically significant. In this case, the F-statistic was 7.087, and the associated p-value was highly significant (<.001). This suggested that the model, which included predictors such as "service_support," "price_frequency," "product_accuracy," "price_payment,"

"product_uniq," "service_enthusiasm," "price_transparency," "price_loyalty," "service_personalise," and "product_info," collectively contributed significantly to explaining the variance in Purchase intention.

Table 13. Regression results of Purchase intention ~ Retail mix elements. Source: Author's calculation.

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	2.963	.259		11.423	<.001
product_uniq	.101	.050	.112	2.006	.045
product_info	.204	.063	.214	3.251	.001
product_accuracy	-.033	.065	-.033	-.512	.609
price_frequency	-.049	.060	-.045	-.813	.417
price_transparency	.104	.063	.096	1.659	.098
price_payment	.053	.053	.056	.999	.318
price_loyalty	-.011	.062	-.011	-.184	.854
service_enthusiasm	-.022	.064	-.022	-.346	.729
service_personalise	.149	.062	.153	2.399	.017
service_support	-.117	.057	-.121	-2.050	.041

The table presented the coefficients from a regression analysis with Purchase intention as the dependent variable and various predictors, including "product_uniq," "product_info," "product_accuracy," "price_frequency," "price_transparency,"

"price_payment," "price_loyalty," "service_enthusiasm," "service_personalise," and "service_support."

The constant term represented the intercept when all predictors were zero. In this model, the constant was 2.963 with a standard error of 0.259. The t-statistic of 11.423 was highly significant ($p < .001$). The constant was smaller than 3, meaning that without considering any of the dependent variables, customers were nearly neutral in deciding whether to purchase at a certain retailer.

Because the regression model had at least one variable that could have significant relationship with Purchase intention, as shown in the ANOVA table above (or F test), the research would look at the t-test of each variable with the associating p-value. It could be seen that product_uniq, product_infor, service_personalise, and service_support passed the t-test with p-value smaller than 0.05. The price_transparency could be considered within this research with p-value < 0.1. The author decided to include price_transparency as a significant variable because this research main aimed was to explore the significant retail mix elements that impacted the purchase decision within the omnichannel retailing in Vietnam. The p-value could be acceptable with novel research in this topic in Vietnam.

In conclusion, product uniqueness, product information, the personalization in service, the post-purchase support, and the transparency of price on omnichannel retailing had significant impact over the purchase intention in the beauty care product segment in Vietnam.

4.5. Other findings

Besides the key research questions, the survey also asked some other behaviors of participants to explore more in the omnichannel retailing in Vietnam. This part would present some interesting points during the study.

4.5.1. Data rearrangement

It could be seen that Martial status, Spending habits, and Frequency had some skewed sub-groups. We would like to re-arrange the labels so that the data was more distributed. It was helpful in analyzing the impact/ habits in each demographic group. In addition, the study wanted to examine the group of "Student" in employment, because they would be the potential customers. Although the figure for Student participants was 54, it was enough in statistics to make an inference. This data rearrangement was used only for demographic differences amongst groups over dependent variables.

Table 14. Data rearrangement in demographic groups. Source: Author's calculation.

Variable	**Value**	**Count**	**Percentage Demographic-group-wise**
Marital	Single	267	56.10%
	Married and have children	209	43.90%
Spending	Less than 1 million	219	43.80%
	Less than 2 million	182	36.40%
	More than 2 million	99	19.80%
Frequency	Less frequent	162	32.40%
	Frequent	202	40.40%
	Very frequent	136	27.20%

The rearrangement was conducted for further analysis of level of integration and purchase intention within demographic groups.

4.5.2. Difference in integration level scoring amongst retailers

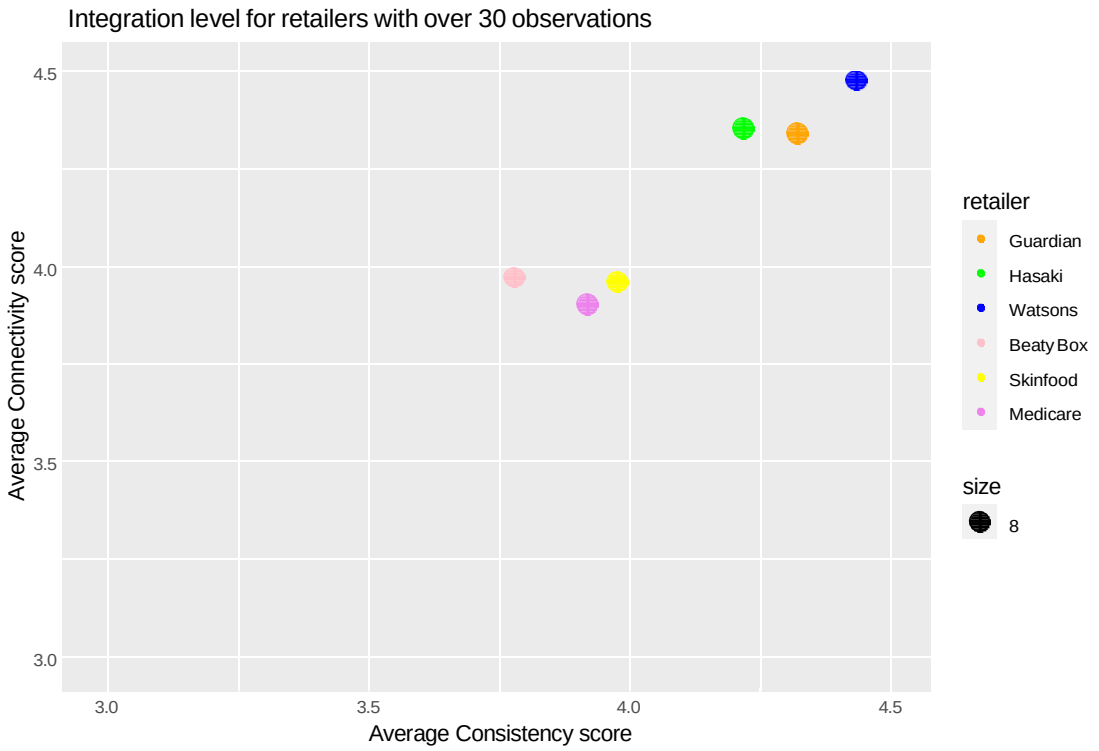


Figure 23. Integration levels for all retailers. Source: Author's calculation.

The study only analyzed retailers who had at least 30 times of being scores (or at least 30 observations). Retailers with less than 30 observations were excluded from the analysis because the outcome might be biased with the small size of sample. The figure above clearly distinct two groups. The first group which had the higher integration level were also the top three retailers in market share including Watsons, Guardian, and Hasaki. The other group included Beauty Box, Skinfood, and Medicare with much lower connectivity and consistency.

Although data visualization was important, the conclusion about the difference between retailers in terms of integration levels should be made after a suitable statistical test, which was ANOVA.

Table 15. ANOVA for Connectivity score ~ Retailer. Source: Author's calculation.

	Df	Sum of square	Mean square	F value	Pr (>F)
Retailer	8	42.9	5.364	5.136	2.68E-06***
Residuals	1043	1089.3	1.044		

Table 16. ANOVA for Consistency score ~ Retailer. Source: Author's calculation.

	Df	Sum of square	Mean square	F value	Pr (>F)
Retailer	8	49	6.119	5.117	2.86E-06***
Residuals	1043	1247	1.196		

Table 17. ANOVA for Integration level ~ Retailer. Source: Author's calculation.

	Df	Sum of square	Mean square	F value	Pr (>F)
Retailer	8	2688	336	6.678	1.50E-08***
Residuals	1043	52475	50.3		

The three ANOVA tests had p-value < 0.01, which was very significant. In other words, there was enough evidence to state that there was a variety of integration levels amongst retailers in Vietnam as the result of different levels of perceived connectivity and consistency.

4.5.3. Difference in integration scoring within demographic groups

One of the main purposes of this research was to explore the status of Omnichannel retailing in Vietnam. This study would delve into the details of different opinions about connectivity, consistency, and integration judgement of each group over each retailer. This section would be divided into two parts. The first part would use the ANOVA test to find statistical evidence about the difference within demographic groups.

The second part would mention some key insights from analysis of data visualization with comparison of the total data.

ANOVA test

Table 18. ANOVA test within demographic groups ~ Connectivity/ Consistency/ Integration. Source: Author's calculation.

Demography	**Levels**	**Connectivity**	**Consistency**	**Integration**	**Conclusion**
Age	From 20 to 25 years old	1.82e-07 ***	5.4e-07 ***	1.56e-08 ***	Statistically significant difference among retailers in: connectivity, consistency, and integration.
	From 26 to 35 years old	0.195	0.0111 *	0.0146 *	Statistically significant difference among retailers in: Consistency and Integration, however, the relationship was weak.
Marital status	Single	3.31e-07 ***	3.96e-05 ***	1.03e-07 ***	Statistically significant difference among retailers in: connectivity,

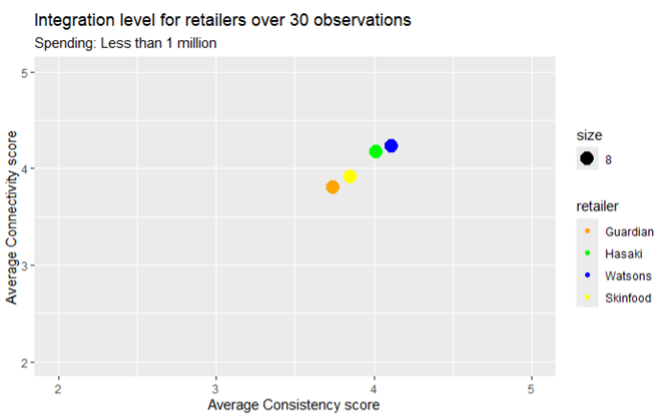
					consistency, and integration.
	Married and have children	0.203	0.0103 *	0.0133 *	Statistically significant difference among retailers in: Consistency and integration. However, the relationship was weak.
Spending	Less than 1 million	0.229	0.0278 *	0.0546	Statistically significant difference among retailers in: Consistency. However, the relationship was weak.
	Less than 2 million	0.0894	0.00862 **	0.00336 **	Statistically significant difference among retailers in: consistency and integration.
	More than 2 million	3e-05 ***	0.00528 **	3.93e-05 ***	Statistically significant difference among

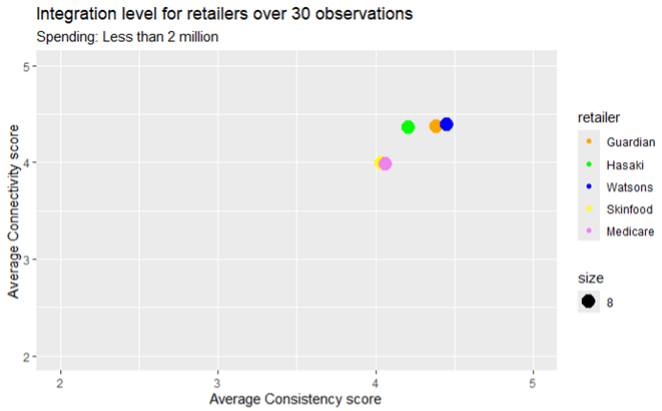
					retailers in: connectivity, consistency, and integration.
Frequency	Less frequent	0.152	0.00781 **	0.0365 *	Statistically significant difference among retailers in: consistency, and integration.
	Frequent	0.257	0.518	0.172	Statistically significant difference among retailers in: none.
	Very frequent	1.32e-07 ***	3.63e-08 ***	3.58e-10 ***	Statistically significant difference among retailers in: connectivity, consistency, and integration.
Employment	Employed	1.91e-05 ***	0.000109 ***	4.34e-07 ***	Statistically significant difference among retailers in: connectivity,

					consistency, and integration.
	Self-employment/Business owner	0.026 *	0.00215 **	0.013 *	Statistically significant difference among retailers in: connectivity, consistency, and integration.

Key insights

In terms of spending expenditure and frequency, there was an interesting pattern that people with higher spending expenditure and higher frequency seem to be more satisfied with the integration levels. It could be seen from the two below figures that those retailers received lower integration scores than higher groups within each demographic group.


Integration level for retailers over 30 observations
Spending: Less than 1 million
Average Connectivity score
Average Consistency score
size
8
retailer
Guardian
Hasaki
Watsons
Skinfood


Integration level for retailers over 30 observations
Spending: Less than 2 million
Average Connectivity score
Average Consistency score
retailer
Guardian
Hasaki
Watsons
Skinfood
Medicare
size
8

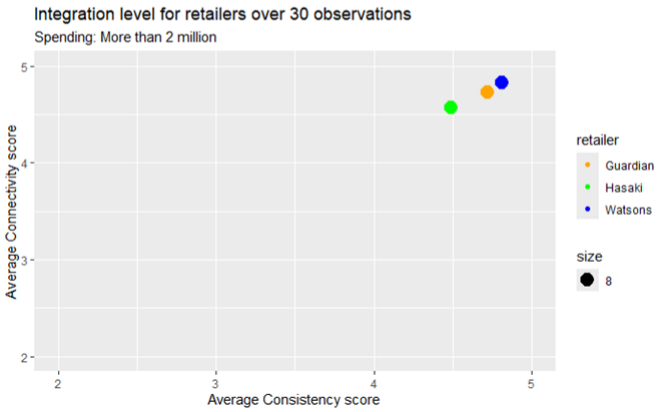

Integration level for retailers over 30 observations
Spending: More than 2 million
Average Connectivity score
Average Consistency score
retailer
Guardian
Hasaki
Watsons
size
8

Figure 24. Integration level by Spending expenditure. Source: Author's calculation.

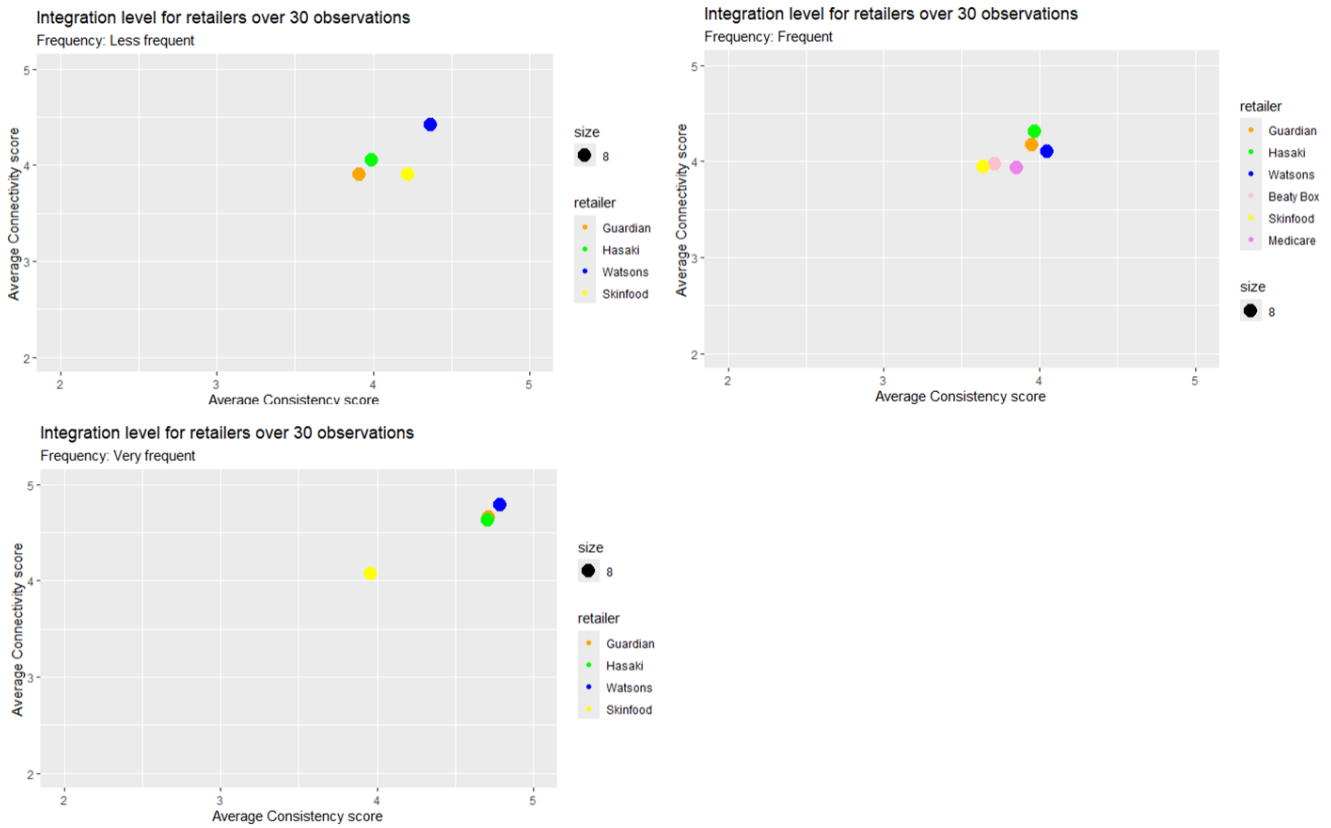


Figure 25. Integration level by Spending frequency. Source: Author's calculation.

4.5.4. Channel combinations.

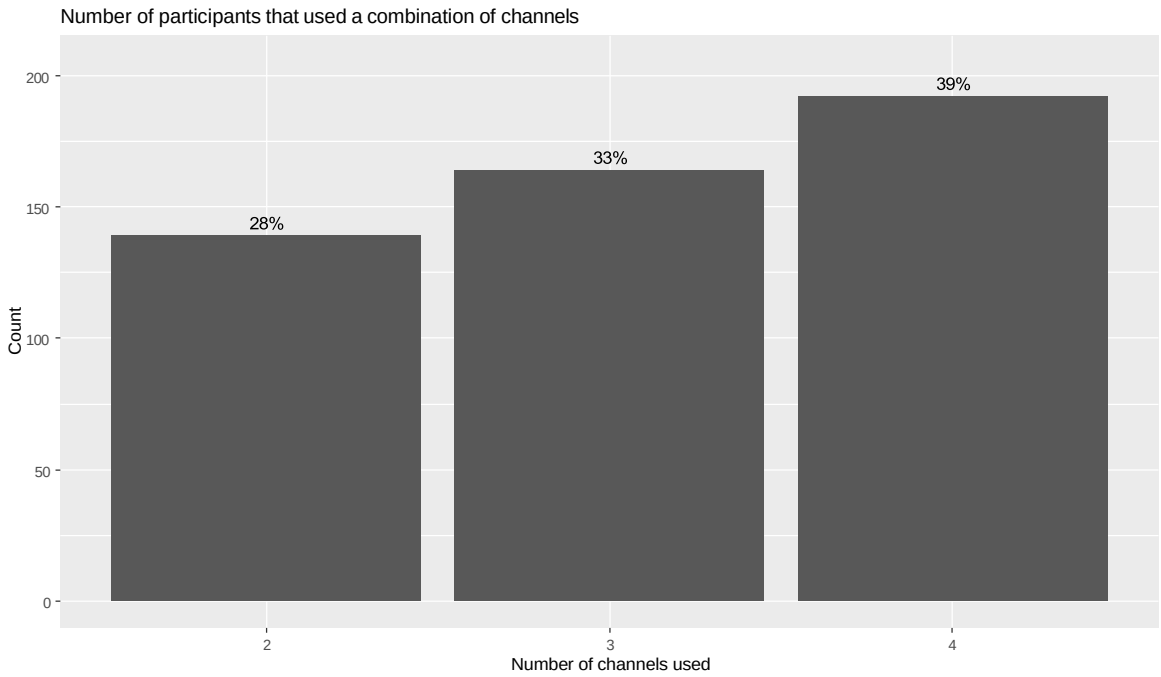


Figure 26. Number of channels used. Source: Author's calculation.

Figure 22 showed the percentage of participants who used a combination of channels in this research. The study excluded participants who used only one type of channel. It could be saw that people used 4 types of channels take a significant proportion, which could show the popularity in combining multiple channels of purchasing beauty products in Vietnam.

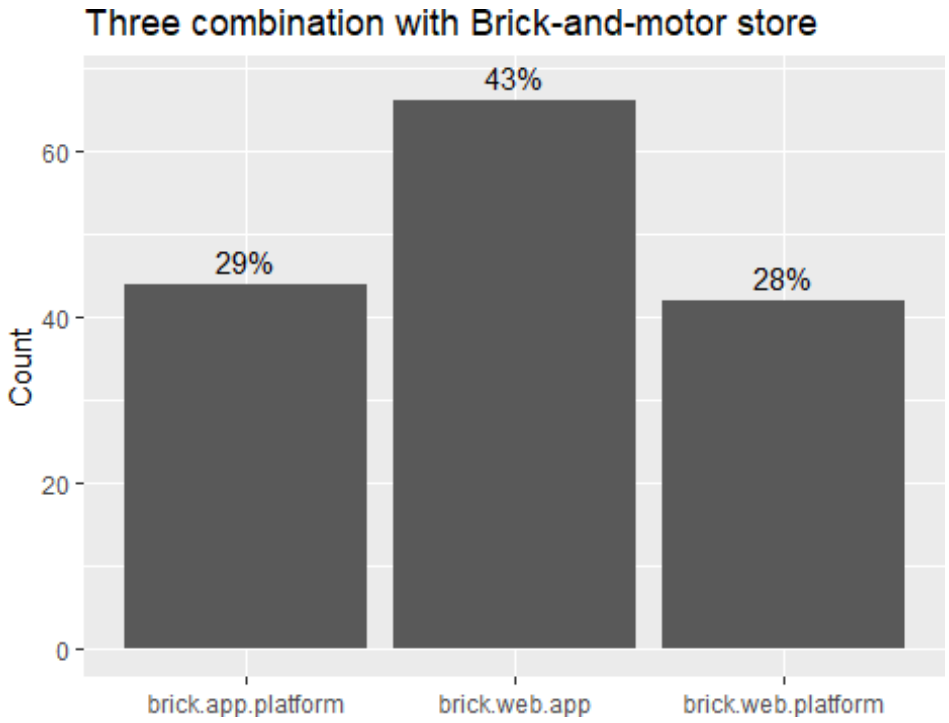


Figure 27. Combination with brick-and-mortar stores. Source: Author's calculation.

While brick-and-mortar channel was essential for all retailers in consumer goods, it could be seen that customers tended to combine brick-and-mortar with websites and applications. Therefore, the first recommendation for retailers in identifying the channel mix was to build their own website and mobile application to capture the first choice of customers effectively.

4.5.5. Improvement points

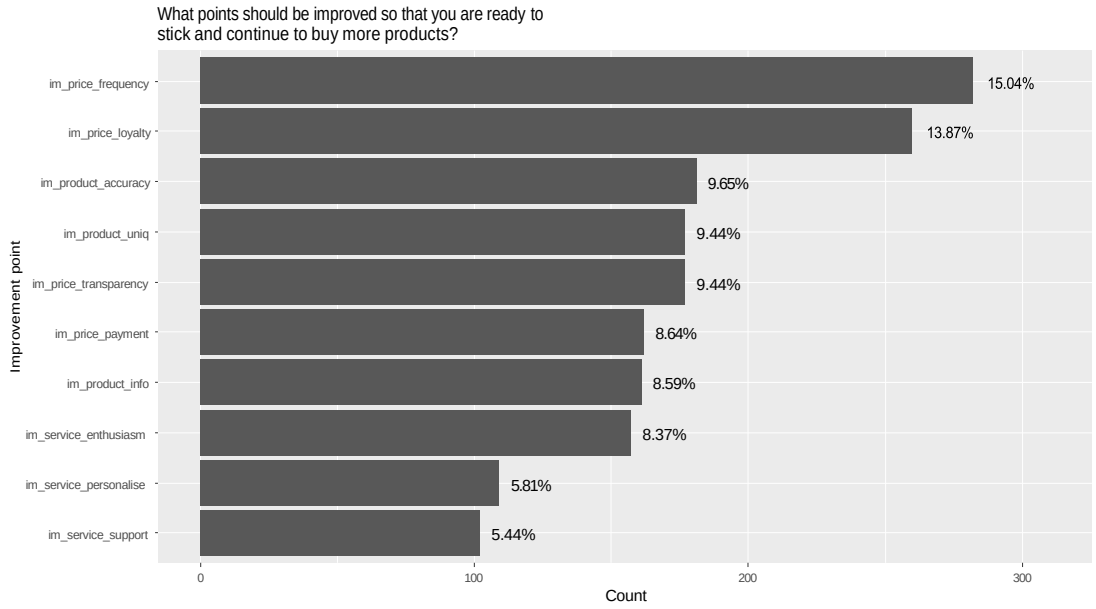


Figure 28. Improvement points. Source: Author's calculation.

The figure illustrated the distribution of responses regarding improvement suggestions provided by participants across various aspects of the beauty care retail experience. Each "improvement" variable corresponded to a specific attribute, and the count and percentage numbers indicated the frequency and proportion of participants suggesting enhancements in each category. Overall, the graph clearly differentiated three groups for improvements.

The first group comprised the two highest proportion variables: frequency in price and loyalty program. The highest proportion was in price frequency. 15.0% of participants indicated a desire for improvement in the frequency of promotions. This suggested that a notable portion of consumers feels that increasing or modifying promotional activities could enhance their overall satisfaction with the beauty care shopping experience. Regarding "im_price_loyalty," 13.9% of respondents expressed a desire for improvement in loyalty programs. This indicated that there was room for

enhancing or introducing more attractive loyalty programs to foster stronger brand loyalty among consumers.

The second group accounted for around 9% with three improvement points in product accuracy, product uniqueness, and product transparency. One interesting point was that product uniqueness received the lowest point when participants were asked about its importance in making purchase decisions.

The third group contained payment methods, product information, and enthusiasm in service. The final group included two service variables: personalization service and service support.

In summary, the analysis of improvement suggestions across various aspects of the beauty care retail experience provided valuable insights into the specific areas where consumers believed enhancements were needed. Retailers could use this information to tailor their strategies and address these consumer expectations, ultimately fostering a more satisfying and competitive beauty care shopping environment. They could develop their improvement plans based on each improvement group to gain the most satisfaction from customers.

4.6. Summary of Findings

This section encapsulated the key discoveries and insights derived from the comprehensive analysis of the research data, shedding light on critical aspects of the beauty care retail landscape in Vietnam. The findings, drawn from both qualitative interviewed and quantitative surveys, collectively contributed to a deeper understanding of consumer behaviors, preferences, and expectations within the context of omnichannel retailing in the beauty care sector.

The investigation into omnichannel retailing in the beauty care sector in Vietnam revealed a complex interplay between online and offline channels. Consumer interactions with multiple channels, as evidenced by the prevalence of two, three, and four-channel combinations, underlined the significance of an integrated and seamless shopping experience.

The analysis of retailer choices over the past year elucidated distinctive patterns in consumer preferences. Watsons, Hasaki and Guardian emerged as leading choices, capturing significant market share. However, a diverse array of retailers, each with its own percentage share, reflected the dynamic nature of consumer choices within the beauty care retail landscape.

The examination of consumer perceptions across various retail attributes provided valuable insights into the factors influencing purchase decisions. From pricing considerations to the importance of accurate product information and the role of personalized service, the findings offered an understanding of the drivers that shape consumer choices.

Participants' suggestions for improvements in different aspects of the beauty care retail experience highlighted opportunities for enhancing promotional activities, loyalty programs, product accuracy, price transparency, and other critical factors. These insights provided actionable recommendations for retailers seeking to refine and optimize their strategies.

The multivariate regression analysis delved into the relationships between key factors and consumers' purchase intentions. The coefficients and significance levels provided valuable information about the relative impact of variables such as integration levels, product uniqueness, product information, service enthusiasm, service support, and price transparency on shaping consumers' intentions to made beauty care purchases.

4.7. Conclusion

Chapter 4 of this research delved deep into the findings derived from analysis of both qualitative and quantitative data, offering a comprehensive overview of omnichannel retailing dynamics within the beauty care sector in Vietnam. This chapter concludes with a synthesis of findings, contributing to the academic discourse and offering actionable insights for industry practitioners. The combination of qualitative and quantitative insights provided a holistic understanding of the beauty care retail sector in Vietnam, laying the groundwork for informed decision-making and strategic adaptations. The chapter set the stage for the final chapter, where the research findings were synthesized and translated into meaningful conclusions and recommendations.

CHAPTER V:

DISCUSSION

In this chapter, a comprehensive discussion of the research findings was presented, aiming to interpret, contextualize, and extract meaningful insights from the data gathered during the study. The combination of qualitative and quantitative results provided an understanding of omnichannel retailing in the beauty care sector in Vietnam, unveiling patterns, implications, and opportunities for further exploration.

5.1. Summary of research findings

This research investigated the impact of omnichannel integration on customer purchase intentions within the beauty care sector in Vietnam. The study utilizes a mixed-methods approach, incorporating both qualitative and quantitative data to provide a comprehensive understanding of the factors influencing consumer behavior in an omnichannel retail environment. The following table would comprehend the findings after Chapter 4 with research questions, hypothesis, data analysis, and results.

Table 19. Research finding summary.

Hypothesis	**Research conclusion**
How does omnichannel retailing impact customers' purchase intention in the beauty care category in Vietnam?	
H1: There was a significant relationship between the omnichannel integration level which was measured through connectivity and consistency with the purchase intention.	Accept in correlation analysis and regression analysis.

What were the significant elements of the omnichannel retailing that influenced customers' purchase intention in the beauty care category in Vietnam?	
H2: Retail mix elements had significantly different effects on purchase intention.	Accept in correlation analysis and regression analysis with some retail mix elements.
H2.1: Product uniqueness was positively related to the customer's purchase intention.	Accept in correlation analysis and regression analysis.
H2.2: Product information was positively related to the customer's purchase intention.	Accept in correlation analysis and regression analysis.
H2.3: Accuracy of product information was positively related to the customer's purchase intention.	Accept in correlation analysis but not in regression analysis.
H2.4: Promotion frequency was positively related to the customer's purchase intention.	Accept in correlation analysis but not in regression analysis.
H2.5: Price transparency was positively related to the customer's purchase intention.	Accept in correlation analysis and regression analysis.
H2.6: Payment method was positively related to the customer's purchase intention.	Accept in correlation analysis but not in regression analysis.
H2.7: Loyalty program was positively related to the customer's purchase intention.	Accept in correlation analysis but not in regression analysis.

H2.8: Service enthusiasm was positively related to the customer's purchase intention.	Accept in correlation analysis but not regression analysis.
H2.9: Personalization was positively related to the customer's purchase intention.	Accept in correlation analysis and in regression analysis.
H2.10: Post-purchase support was positively related to the customer's purchase intention.	Accept in correlation analysis and regression analysis.

The research confirmed that several retail mix elements significantly impacted purchase intention in the beauty care category in Vietnam. Elements like product uniqueness, detailed product information, price transparency, personalization service, and robust post-purchase support were particularly influential. These findings underscored the need for retailers to focus on these key areas to enhance customer purchase intentions and drive sales in an omnichannel retail environment.

5.2. Research Question One

For the purposes of this study, the first research question was articulated as: "How does omnichannel integration impact customers' purchase intention in the beauty care category in Vietnam?" The aim of this research question was to delve into the influenced of omnichannel integration, specifically measured in terms of connectivity and consistency, on customers' purchase intentions within the beauty care sector in Vietnam. The exploration of this question was critical to understanding how the seamless integration of various shopping channels could enhance the consumer experience and drive purchasing behavior.

The analysis conducted within this study revealed that both connectivity and consistency had a significant positive impact on customers' purchase intention. This finding was consistent with the primary objective of omnichannel integration, which was to create a seamless shopping experience across all touchpoints. By ensuring that customers could easily navigate between different channels—be it online, in-store, or mobile—retailers could significantly enhance the overall shopping experience. The positive correlation between omnichannel integration and purchase intention found in this study aligned with the findings of Furquim et al. (2022), Mishra et al. (2021), and Verhoef et al. (2015), reinforcing the validity of these results within the broader academic discourse.

Furthermore, the research establishes a clear relationship between the data set, based on retailer order choice, and customers' purchase intention. This relationship underscored the practical implications of omnichannel strategies in shaping consumer preferences and decision-making processes. A particularly critical insight emerged when comparing the impact of connectivity and consistency on purchase intention. The analysis indicated that connectivity exerts a substantially greater influence on customers' purchase intentions compared to consistency. This was most notable in the context of the first retailer choice, where the impact of connectivity nearly doubles that of consistency, with coefficients of 0.30 and 0.15, respectively. Such disparities underscored the differential effects of these omnichannel integration dimensions, highlighting the necessity for retailers to prioritize connectivity strategies to enhance customer engagement and intention.

In essence, the findings related to Research Question One illuminate the pivotal role of omnichannel integration, with a specific emphasis on connectivity and consistency, in shaping customers' purchase intentions within the beauty care sector in

Vietnam. These insights provided a robust foundation for retailers to strategically align their omnichannel efforts, recognizing the varying impact of connectivity and consistency on consumer decision-making processes. By prioritizing connectivity, retailers could better engage with customers, fostering stronger purchase intentions and ultimately driving sales in the competitive beauty care market.

5.3. Research Question Two

For mentioning purpose, the research question two of this study was “What are the significant elements of the omnichannel retail mix that influenced customers' purchase intention in the beauty care category in Vietnam?”. This research question delved into uncovering the significant elements within the omnichannel retail mix that influenced customers' purchase intention.

The exploration of the omnichannel retail mix through the qualitative phase identified three essential element groups – Product, Price & Promotion, and Service. Each of these elements demonstrated a considerable and significant impact on customers' purchase intention, indicating the critical role they played in shaping consumer behavior and decisions. The Product element encompassed the uniqueness, quality, and detailed information of the products offered, all of which contributed to attracting and retaining customers. Price & Promotion involved not only competitive pricing strategies but also the frequency and transparency of promotions, as well as flexible payment options and loyalty programs that could significantly influence purchasing decisions. The Service element included the enthusiasm of staff, personalized recommendations, and effective post-purchase support, all of which enhance the overall shopping experience and foster customer loyalty. This comprehensive examination of the retail mix elements

underscored their intertwined relationship in molding consumer behaviors and driving purchase intentions within the omnichannel retail environment.

The expert interview analysis further elucidated the importance of the Product, Price & Promotion, and Service dimensions of the retail mix as crucial determinants of customers' purchase intentions. Experts emphasized the significance of offering high-quality and diverse products, which cater to varying consumer preferences and needs. Competitive pricing strategies, coupled with transparent and frequent promotions, were highlighted as essential for maintaining customer interest and encouraging repeat purchases. Additionally, the overall service experience, characterized by enthusiastic and knowledgeable staff, personalized customer interactions, and robust post-purchase support, was identified as a key driver of customer satisfaction and loyalty. These insights from experts align with the broader literature on retail mix elements and their impact on consumer decision-making, reinforcing the notion that a well-rounded omnichannel strategy, incorporating these critical elements, was fundamental to enhancing customer engagement and driving successful retail outcomes.

In detail, five out of ten retail mix elements were significant to the impact on purchase intention. The five retail mix elements that significantly impacted purchase intention within the context of omnichannel retailing were product uniqueness, product information, price transparency, personalization service, and post purchase service support. Customers in the beauty care industry particularly value unique and distinctive products. The availability of exclusive items across multiple channels enhanced the overall shopping experience, increasing the likelihood that customers would engage and made purchases (Guissoni et al., 2017). This distinctiveness helped to differentiate the brand, attracting and retaining customers who sought unique offerings that stand out in the market.

Detailed and accurate product information was essential for successful omnichannel retailing (Riaz et al., 2021). Customers expected to have consistent access to comprehensive information, such as ingredient lists and usage instructions, across all channels. The availability of such detailed information was crucial for making informed purchasing decisions. Customers, whether shopping online or offline, should be able to easily access product information that fosters transparency and built trust. This factor ensured that clients could make purchases confidently, thereby increasing their inclination to buy.

Price transparency was another critical element in shaping customer perceptions and actions in the omnichannel context. Customers desire consistent and clear pricing across various channels. The ability to compare prices across multiple sources was essential for making informed choices. Price transparency enhanced the overall consumer experience and built trust between the customer and the retailer. When customers perceived that pricing was transparent, they were more likely to develop a positive intention to purchase (Harsha et al., 2019).

For service element groups, personalization service and post-purchase support were significant. Agree with the author's initial belief that personalization is important in the context of omnichannel. This significant factor might be due to the characteristics of beauty care products, customers want to be consulted and advised to choose the most suitable products personally. Post-purchase products also required much human interaction.

Personalization was a significant element that impacted purchase intention in the omnichannel retail environment. Personalization could grealy enhance the customer experience and overall satisfaction of the shopping experience by providing personalized experience for them. This level of suitability could enhance customer satisfaction and

foster loyalty, making customers more likely to return for future purchases. Similarly, effective service support, including post-purchase assistance and problem resolution, played a crucial role in maintaining customer satisfaction. Providing reliable and efficient support services ensured that customers felt valued and supported throughout their shopping journey, further reinforcing their decision to purchase and increasing their overall satisfaction with the retailer.

The other five elements, although showed no significant relationship in regression analysis, did show moderate to strong correlation with the purchase intention. This fact pointed out the research opportunity for further exploration into other elements, especially with retailers wanting to emphasize some specific elements based on their company's resources.

For retailers operating in the beauty care category in Vietnam, these insights hold profound implications. Crafting strategies that optimized product offerings, pricing structures, and service experiences become important. The understanding of the specific elements that resonated with consumers allowed retailers to tailor their omnichannel approaches for maximum impact.

In conclusion, Research Question Two illuminated the key elements within the omnichannel retail mix that wield significant influenced over customers' purchase intention in the beauty care sector in Vietnam. The identified dimensions – Product, Price, and Service – served as focal points for retailers seeking to optimize their omnichannel strategies and create a compelling shopping experience that resonated with consumer preferences and expectations.

5.4. Discussion of other findings

The insights derived from the analysis of channel combinations and retailer preferences highlighted the complex nature of consumer interactions with omnichannel retailing. The phenomenon of diverse channel combinations suggested that consumers were actively engaging with multiple channels simultaneously. This behavior emphasized the need for retailers to adopt a cohesive and integrated approach that seamlessly connects online and offline touchpoints. For instance, a consumer might research a product online, check reviewed on social media, and then made a purchase in-store. Retailers had to ensure that their omnichannel strategies provided a consistent and frictionless experience across all these platforms. This involved synchronizing inventory, pricing, and promotions, as well as offering services like click-and-collect, which allow customers to shop online and pick up their purchases in-store. By doing so, retailers could meet the evolving demands of modern consumers who expected convenience, flexibility, and a unified shopping experience.

The dominance of Hasaki and Guardian as preferred retailers signified their strong market presence and ability to meet consumer needs effectively. However, the percentages associated with each retailer revealed a varied landscape of consumer choices, indicating that there was no single dominant player in the market. This prompted a discussion on the various factors influencing retailer preferences. Key factors included brand reputation, which built trust and loyalty among consumers; product assortment, which ensured that a wide range of products were available to meet diverse consumer needs; and the overall shopping experience, which encompassed everything from the ease of navigation on a website to the quality of customer service in a physical store. Understanding these factors was crucial for retailers aiming to enhance their market position. Retailers like Hasaki and Guardian might excel due to their strong brand

reputation and comprehensive product range, but they had to continue to innovate and improve their customer experience to maintain their market leadership. Conversely, smaller or emerging retailers could carve out a niche by focusing on specific aspects such as exceptional customer service or unique product offerings that differentiate them from the competition. By analyzing consumer preferences and adapting their strategies accordingly, retailers could better cater to their target audience and drive sustained growth in the competitive omnichannel retail environment.

The discussion on consumer perceptions delved deeply into the implications of critical factors such as pricing, product information accuracy, and personalized service. These elements were central to the shopping experience and significantly influenced consumer behavior and satisfaction. For instance, understanding the weight that consumers place on accurate product information provided retailers with actionable insights to enhance their strategies. This accuracy was not merely about listing ingredients or features; it involved providing comprehensive, clear, and consistent information across all channels. Transparency in product details built consumer trust and confidence, which was crucial for fostering loyalty and encouraging repeat purchases. Moreover, accurate product information reduced the likelihood of returns and complaints, leading to cost savings and improved customer satisfaction. By focusing on these aspects, retailers could ensure that consumers felt well-informed and valued, enhancing their overall shopping experience.

Participants' suggestions for improvement were invaluable for retailers aiming to refine their offerings. These suggestions often stemmed from firsthand experiences and highlighted specific areas where retailers could make tangible improvements. The discussion in this section explored the strategic implications of these improvement areas in depth. For instance, consumers might suggest enhancements in website usability, better

in-store navigation, or more personalized customer service. Implementing such improvements could have a substantial impact on customer satisfaction. When customers saw that their feedback was being taken seriously and acted upon, it enhanced their perception of the brand as responsive and customer centric. This, in turn, fostered loyalty and positive word-of-mouth recommendations. Additionally, improving these aspects could differentiate a retailer from its competitors, making it more attractive to potential customers. For example, a retailer that excelled in personalized service by leveraging customer data to offer tailored recommendations could create a unique shopping experience that stood out in a crowded market. By addressing these improvement areas, retailers could significantly boost their overall brand perception, leading to increased market share and sustained business growth. The multivariate regression analysis provided a deeper understanding of the factors influencing consumers' purchase intentions. Coefficients and significance levels offered insights into the relative importance of variables, informing retailers about the key drivers that should be prioritized in their strategic planning.

Reflecting on the descriptive statistics and correlation analysis, the discussion elucidated the patterns, central tendencies, and interrelationships within the dataset. Descriptive statistics provided a comprehensive overview of the data, highlighting key metrics such as meant, medians, and standard deviations. This foundational analysis offered insights into the general tendencies and characteristics of the sample population, revealing significant trends in consumer behaviors and preferences. For instance, identifying the average frequency of purchases or the most preferred shopping channels could help retailers tailor their strategies to meet consumer demands more effectively. Furthermore, the correlation analyzed delved into the relationships between different variables, uncovering how various factors, such as price transparency or product

uniqueness, interrelate and influence consumer purchase intentions. These insights contributed to a deeper understanding of consumer behaviors, enabling retailers to make data-driven decisions to enhance customer satisfaction and drive sales.

An overarching theme in this discussion was the integration of qualitative and quantitative insights. This synergistic approach allowed for a holistic interpretation of the research findings, ensuring that the depth of consumer experiences captured in interviewed aligned with the broader trends observed in the survey data. Qualitative data, derived from interviewed and open-ended survey responses, provided rich, contextual insights into consumer attitudes, motivations, and experiences. These narratives offered a nuanced understanding of the 'why' behind consumer behaviors, complementing the 'what' identified through quantitative analysis. For example, while quantitative data might reveal a high correlation between personalized service and purchase intention, qualitative insights could explain the underlying reasons, such as consumers feeling valued and understood. By integrating these two types of data, the research ensured a more comprehensive and robust analysis, bridging the gap between numerical trends and human experiences. This holistic approach not only enhanced the validity of the findings but also provided a multi-dimensional perspective that was critical for developing effective omnichannel retail strategies. By considering both the statistical patterns and the qualitative nuances, retailers could craft more informed, customer-centric approaches that address both the empirical evidence and the emotional and psychological drivers of consumer behavior.

5.5. Research gap and research reflection

This study addressed a critical gap in the existing literature on omnichannel retailing by focusing on the customer's perspective, particularly within the context of

Vietnam. Previous research predominantly concentrated on the operational aspects of omnichannel strategies and their implementation by retailers, often assuming that these strategies were already in place and functioning effectively. This left a significant gap in understanding how omnichannel strategies impacted customer decision-making journeys, especially from the viewpoint of the customers themselves.

This research made significant strides in addressing the identified gaps in the existing literature on omnichannel retailing from the customer's perspective, particularly within the context of Vietnam. Through a rigorous and comprehensive investigation, the study provided new insights and practical implications that contributed to the academic discourse and offered actionable guidance for retailers.

By focusing explicitly on the customer's viewpoint, this research delved into how customers perceived and interacted with omnichannel retail environments. The study employed both qualitative and quantitative methods to gather rich data on customer preferences, experiences, and satisfaction levels. Interviewed and surveys conducted with Vietnamese consumers revealed critical insights into their decision-making processes and highlighted the importance of factors such as connectivity, consistency, product uniqueness, detailed product information, and transparent pricing. This customer-centric approach ensured that the findings were deeply rooted in real consumer experiences, thus bridging the gap left by prior studies that primarily concentrated on the retailer's perspective.

In line with recommendations from systematic reviewed calling for more customer-focused research, this study meticulously examined how omnichannel retailing influenced customer purchase intentions. By addressing the call for empirical investigations into the customer perspective, this research not only contributed to filling the identified gap but also strengthens the academic foundation for understanding the

dynamics of omnichannel retailing. The use of mixed methods—combining qualitative insights with quantitative analysis—added robustness to the findings, providing a comprehensive view of customer behavior in omnichannel settings.

This research offered concrete evidence supporting the benefits of adopting omnichannel strategies from a customer-centric perspective. The findings demonstrated that well-integrated omnichannel approaches significantly enhance customer satisfaction and purchase intentions. By highlighting the critical role of connectivity and consistency, along with key retail mix elements such as product uniqueness and transparent pricing, the study provided retailers with empirical data to justify investments in omnichannel capabilities. This evidence could help retailers understand the tangible benefits of omnichannel integration, encouraging them to undertake the necessary transformations to meet modern consumer expectations.

The focus on Vietnam, a rapidly growing market with unique consumer behaviors, added a valuable contextual dimension to the research. By examining omnichannel retailing in the Vietnam beauty care sector, the study offered insights that were directly applicable to this specific market. The findings revealed how Vietnamese consumers navigated and value different aspects of omnichannel retailing, providing local retailers with targeted strategies to enhance customer engagement and satisfaction. This contextual relevance was crucial for developing effective omnichannel strategies that resonated with Vietnamese consumers, thus closing the gap left by the absence of comprehensive research in this market.

In summary, this research effectively closed significant gaps in the literature on omnichannel retailing by adopting a customer-centric approach, aligning with systematic review recommendations, providing empirical evidence for retail transformation, and offering contextual insights specific to the Vietnam market. The study's comprehensive

methodology and robust findings offered valuable contributions to both academic knowledge and practical applications, helping retailers understood and optimized their omnichannel strategies to better meet customer needs and enhance their competitive edge.

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1. Summary

This research endeavored to explain the dynamics of omnichannel retailing within the beauty care sector in Vietnam, aiming to provide a comprehensive understanding of how various elements influenced customer behavior. Employing a mixed-methods approach, the study meticulously examined the impact of omnichannel integration and key retail mix elements on customers' purchase intentions. The qualitative phase involved in-depth interviewing 30 experts, uncovering essential retail mix elements such as product, price & promotion, and service dimensions. This phase offered rich insights into the strategic importance of these elements in shaping customer perceptions and engagement within an omnichannel framework.

Subsequently, the quantitative phase scrutinized customer perceptions and behaviors through extensive surveys and rigorous statistical analysis. This phase aimed to validate the qualitative findings and explore the relationships between omnichannel integration, retail mix elements, and purchase intentions. The combination of correlation and regression analysis provided a robust understanding of how specific elements drive consumer behavior and purchasing decisions in an omnichannel setting.

In summary, the qualitative findings identified ten retail mix elements deemed important by experts in Vietnam's omnichannel context, emphasizing the importance of integrating these elements effectively to enhance customer experience. Meanwhile, the quantitative results highlighted the substantial impact of omnichannel connectivity and consistency on customers' purchase intentions, pinpointing which retail mix elements were significant from the customer's perspective. Elements such as product uniqueness,

comprehensive product information, price transparency, personalization service, and effective post-purchase support emerged as pivotal factors influencing consumer behavior in the omnichannel landscape.

The synthesis of qualitative and quantitative insights provided a holistic understanding of the omnichannel retailing landscape in the beauty care sector in Vietnam. This integrated approach ensured that the findings were grounded in both expert opinion and empirical data, offering a nuanced perspective on how omnichannel strategies could be optimized. The subsequent sections delved into the implications of these findings, offering actionable recommendations for practitioners to enhance their omnichannel strategies and for future researchers to explore new dimensions of omnichannel retailing. This comprehensive analysis underscored the need for a cohesive and customer-centric approach to omnichannel retailing, ensuring that all touchpoints were seamlessly integrated to foster customer satisfaction and loyalty.

6.2. Implications

The findings of this research carried significant implications for both academia and practitioners in the beauty care sector within the context of omnichannel retailing in Vietnam. Each implication was derived from each finding from the research results. Findings 1 to 5 were directly related to the research questions while other findings were derived from the data after it was collected and analyzed.

Finding 1: Integration degree impacted the purchase intention.

The findings highlighted the critical impact of integration level in affecting client purchasing intentions. It was clear that increasing the level of integration had a beneficial impact on buying intention. Simply put, companies with better integration levels were more likely to see repeat transactions from their clients. This conclusion had far-reaching

ramifications for retailers, mandating a strategic realignment toward significant expenditures in integration strategies targeted at fostering connectivity and uniformity across several platforms. Such a strategy shift necessitates not only financial investments, but also a complete makeover of technological infrastructure, which included the introduction of cutting-edge technology, unified communication systems, and holistic customer experience initiatives. By implementing these transformative steps, merchants might significantly improve their omnichannel capabilities, increasing consumer satisfaction and loyalty in the fiercely competitive retail industry.

Finding 2: Connectivity had a higher impact on the purchase intention than consistency.

Building on the insights gained from Finding 1, which demonstrated the relevance of integration level in affecting purchase intention, finding 2 refines our understanding by emphasizing the relative value of connectivity and consistency in the omnichannel context. In essence, while both connectedness and consistency played important roles in determining customer behavior, the analysis showed that connectivity had a greater influence on purchase intention than consistency. This nuanced insight provided useful guidance to merchants dealing with resource restrictions, especially when faced with the difficult decision of preferring connectivity over consistency within a restricted investment budget. As a result, finding 2 acts as a wake-up call for retailers to refocus their strategic priorities, allocating considerable resources to strengthen integration plans that value connectedness over consistency. Embracing such a strategic shift needs a diverse approach that includes the deployment of cutting-edge technologies, the construction of unified communication systems, and the execution of comprehensive customer experience projects. By allocating resources to projects that promote seamless connectivity across many channels, merchants might effectively improve their

omnichannel capabilities, bolstering customer engagement and loyalty in an increasingly competitive retail world.

Finding 3: From the channel combination findings, retailers should build their own website and mobile applications to capture the first choice of customers effectively.

Building on the insights gained from Finding 2, which emphasized the importance of prioritizing connectivity over information consistency across channels, finding 3 investigated the strategic implications for retailers in terms of channel investments. The channel combination findings were useful for merchants looking to optimize their omnichannel strategy to properly capture customer preferences and maximize engagement. The data demonstrated a hierarchical structure in customer channel choices, with a strong preference for brick-and-mortar stores, followed by websites, mobile applications, and e-commerce platforms. This hierarchical sequence emphasized the critical relevance of investing in the creation and optimization of proprietary websites and mobile applications as major points of consumer connection. By strategically distributing resources in accordance with this channel hierarchy, businesses could effectively capture customers' first choices. As a result, finding 3 served as a strategic roadmap for retailers, outlining the ideal channel investment objectives to strengthen their omnichannel capabilities and generate sustainable growth in an increasingly competitive market context.

Finding 4: Five retail mix elements (product uniqueness, product information, price transparency, personalization service, and post-purchase service) were significant to the purchase intention.

Building upon the comprehensive analysis conducted in this study, finding 4 underscored the pivotal role of five distinct retail mix elements—product uniqueness, product information, price transparency, personalization service, and post-purchase

service—in shaping customers' purchase intentions within the omnichannel retail landscape. This result provided practical insights for practitioners looking to improve the omnichannel commerce experience and generate long-term company growth.

For practitioners in the beauty care industry and beyond, identifying these critical retail mix factors provided significant strategic assistance. By deliberately implementing these features into their omnichannel strategy, merchants could build a unique and engaging customer journey that speaks to their target demographic. In summary, finding 4 acts as a road map for practitioners, identifying the important retail mix aspects that required strategic attention and investment. By exploiting these data, merchants could successfully improve their omnichannel strategy, matching their products with consumer preferences and expectations, maximizing purchase intents and driving long-term company success.

Finding 4.1: Product uniqueness had a significant relationship to the purchase intention.

The analysis demonstrated a strong link between product distinctiveness and client purchase intentions in the beauty care industry. This research highlighted the intrinsic value customers place on the uniqueness or exclusivity of items when making purchase decisions, underlining the necessity for merchants to emphasize product differentiation initiatives to prosper in today's competitive market scenario.

Retailers might use the notion of product uniqueness as a cornerstone of their marketing and branding strategy. Targeted advertising campaigns, compelling product descriptions, and strategic promotional initiatives could help retailers highlighted the exclusivity and desirability of their offerings, appealing to consumers who value individuality and uniqueness in their beauty care purchases.

Furthermore, the findings indicated that product originality might be a potent differentiator in a crowded economy, allowing merchants to distinguish themselves from competitors and promote brand loyalty among consumers. Retailers might create a compelling value offer that went beyond pricing concerns and fostered long-term customer connections by curating a portfolio of distinctive and inventive items that appeal to their target demographic.

Finding 4.2: Product information had a significant relationship to the purchase intention.

The investigation emphasized the importance of precise product information in affecting customers' purchasing decisions. This conclusion underscored the importance for merchants to ensure that consumers had easy access to critical product facts, such as ingredient lists, usage directions, and product advantages, both online and offline. Providing extensive and honest product information allowed customers to make educated purchasing decisions, establishing trust and confidence in the brand.

Retailers might use product information as a strategic differentiation in the highly competitive beauty care sector. Retailers might dramatically improve consumer perceptions of value by providing extensive and accurate product descriptions that included quality, effectiveness, and distinctive characteristics. Incorporating user feedback and multimedia information, such as instructional videos and high-resolution photographs, might help consumers better understand and experience the product.

Furthermore, clear product information might serve as the foundation for efficient marketing and communication efforts. Retailers might develop captivating storylines that appeal to customers by stressing their items' particular features and qualities. This technique not only helped to attract new clients, but it also helped to keep current ones by reaffirming their trust in the brand.

In addition to increasing bought intentions, giving detailed product information helped lower post-purchase dissatisfaction and return rates. When customers were well-informed about what to anticipate from a product, they were more likely to be pleased with their purchase, resulting in greater customer loyalty and repeat business.

Furthermore, in the digital era, where customers frequently study things online before making a purchase, having a strong online presence with thorough product information was even more important. Retailers should make sure their websites and mobile apps were user-friendly and give detailed product information, making it easier for customers to search and compare products. This digital accessibility might dramatically improve the buying experience and increase conversion rates.

Finding 4.3: Price transparency had a significant relationship to the purchase intention.

The finding underscored that pricing transparency had a substantial impact on customers' purchasing inclinations. Retailers had to ensure that their price information was consistent and clear, both online and offline, to create consumer trust. Transparent pricing not only increased trust, but it also improved the perceived worth of items, which might influence purchasing intentions. Retailers might build trust with their clients by clearly disclosing price information and eliminating hidden taxes or levies.

Retailers might use pricing transparency to gain a strategic competitive edge in the marketplace. Clear and consistent pricing information might set a company apart from its competitors in an era when consumers were becoming more price-sensitive and knowledgeable. By clearly presenting pricing, discounts, promotions, and any additional expenses like shipping, companies might attract customers who value justice and honesty in their purchase decisions. This transparency reduced customer uncertainty and fear, resulting in better levels of trust and loyalty for the brand.

Furthermore, clear pricing decreased the possibility of unfavorable shocks for customers at checkout, which could play a big role in lowering cart abandonment rates. When customers were convinced that the price they saw was the amount they would pay, they were more likely to finish their transactions. This basic pricing model also simplifies decision-making by allowing consumers to compare items and prices more easily, perhaps increasing conversion rates.

Furthermore, businesses should prioritize improving their web platforms to deliver accurate and current price information. This included prominently presenting any discounts, special offered, and comprehensive breakdowns of shipping prices and taxes. Ensuring that this information was easily available and understandable might greatly improve the online purchase experience. Effective use of technology, such as dynamic pricing algorithms and real-time updates, might help guarantee that clients always had access to the most up-to-date pricing data.

Finding 4.4: Personalization service had a significant relationship to the purchase intention.

The analysis revealed that personalization service played a pivotal role in shaping customers' purchase intentions within the beauty care sector. Despite advancements in technology and the increased reliance on automated systems, the ability to provide personalized services remained a crucial element of the customer experience. Retailers should focus on creating personalized shopping experiences based on individual customer preferences and behaviors. By offering tailored product recommendations and customized shopping experiences, retailers could engage customers more effectively and make them feel valued.

Finding 4.5: Post-purchase service had a significant relationship to the purchase intention.

According to the research, customers' intentions to make a purchase were highly influenced by post-purchase service. Retailers needed to understand that their relationship with customers goes way beyond the time of sale and includes the whole period after a customer's purchase. Building enduring ties with customers and encouraging loyalty were critical at this time. To increase consumer happiness, retailers should give priority to offering effective and efficient post-purchase services. Providing dependable order monitoring solutions that let clients see the progress of their orders in real time was one way to do this. Retailers might ease consumers' anxieties and foster trust by providing updates regarding their orders, which enhanced the whole shopping experience.

Another crucial component of post-purchase service was product assistance. Retailers needed to make sure that clients could easily contact customer service for any problems or inquiries that could come up after the transaction. Numerous channels, including customer care hotlines, live chat assistance, and thorough FAQs on the retailer's website, could be used to accomplish this. In addition to solving customer issues, prompt and courteous support showed the retailer's dedication to providing excellent customer service, which might greatly increase brand loyalty.

Another essential element of post-purchase service was returning management. It was recommended that retailers establish unambiguous and user-friendly return policies that facilitate customers' ability to return or exchange merchandise. Enhancing the customer experience might be achieved by streamlining the return process, for example, by providing free return shipping and easy return processes. Repeat business was more likely when a pleasant returns experience transforms a potentially bad circumstance into an example of superior customer care.

Post-purchase communication was also very important for keeping customers engaged. After a consumer made a purchase, retailers should get in touch with them to

hear from them, resolve any issues, and suggest other products based on their past purchases. A customer's favorable experience might be reinforced, and future purchases could be encouraged via personalized follow-up emails or communications.

Finding 5: There was a variety of integration levels amongst retailers in Vietnam.

Finding 5 revealed significant variability in the integration levels among beauty care retailers in Vietnam. Significant implications flow from this diversity for individual stores as well as the industry at large. This finding emphasized the need for individual shops to strategically evaluate their current integration capabilities and undertake comprehensive self-assessments. To improve their omnichannel capabilities, retailers with lesser levels of integration needed to give priority to investments in cutting-edge technologies and efficient procedures. To provide a seamless buying experience, this could entail implementing advanced CRM or CDP systems, enhancing data analytics, and fusing online and offline sales channels.

This study implied a chance for retailers with high levels of integration to take advantage of their advanced capabilities as a clear competitive advantage. To draw in tech-savvy customers who value ease and a cohesive shopping experience, these businesses should highlight their technology expertise and smooth omnichannel operations in their marketing efforts. Customers that value these qualities could be drawn in and kept by emphasizing features like synced inventory across all channels, tailored marketing communications, and a smooth transition between online and offline buying.

The recognition of different levels of integration across the industry encourages joint efforts and knowledge-sharing programs. Vietnam's beauty care stores might provide their customers with a more uniform and seamless omnichannel experience by setting industry benchmarks and integration standards. Creating forums or associations where shops could exchange technical advances, integration strategies, and best practices

could be one way to do this. These kinds of cooperative initiatives could improve the general standard of omnichannel commerce in the beauty care industry.

The role of industry associations and policymakers was crucial in enabling these cooperative endeavored. They could plan omnichannel integration-focused workshops, seminars, and training courses, giving retailers the resources and know-how they needed to improve their business processes. To further encourage advancements throughout the sector, shops investing in omnichannel solutions might also be eligible for grants or other incentives.

Finding 6: People with higher spending expenditure and higher frequency seem to be more satisfied with the integration levels.

Finding 6 revealed a positive correlation between higher spending expenditure and frequency of purchase with greater satisfaction regarding integration levels. This suggested that customers who spend more and shop more frequently tended to appreciate and value a well-integrated omnichannel experience. For retailers, this finding implied significant opportunities to tailor marketing and engagement strategies specifically for high-spending and frequent customers, emphasizing the enhanced benefits of an integrated omnichannel experience. Retailers could capitalize on this insight by offering exclusive promotions and personalized recommendations to these valuable customers. Developing loyalty rewards programs that provided added incentives for high-spending and frequent customers could further enhance their satisfaction and loyalty. For instance, retailers might offer special discounts, early access to new products, or exclusive invitations to events for these customers. Such personalized and exclusive treatment could make high-value customers felt appreciated and recognized, thereby fostering a deeper sense of loyalty and satisfaction.

This finding also suggested the potential for implementing tiered omnichannel programs that cater to different customer segments based on their spending and shopping frequency. By creating tiered levels of benefits, retailers could offer progressively more valuable perks to customers as they increased their spending and frequency of purchases. For example, a basic tier could offer standard benefits such as free shipping, while higher tiers could include perks like priority customer service, personalized shopping experiences, and exclusive product previews. This tiered approach not only incentivizes increased spending and frequency of purchases but also cultivates a sense of exclusivity and privilege among top-tier customers. Furthermore, retailers should leverage data analytics to identify and understand the preferences and behaviors of their high-spending and frequent customers. By analyzing purchasing patterns and customer feedback, retailers could refine their omnichannel strategies to better meet the needs and expectations of these important customer segments. This could involve optimizing the integration of online and offline channels, ensuring seamless transitions between different touchpoints, and providing consistent and personalized experiences across all channels.

Finding 7: Improvement order list.

Finding 7, which highlighted an improvement order list based on customer opinions, held significant implications for retailers aiming to enhance their omnichannel strategies. This finding provided a structured roadmap for retailers to prioritize areas that required attention and improvement. By understanding the specific areas customers believed need enhancement, retailers could strategically allocate their resources to address these concerns effectively. The improvement order list served as a valuable guide, enabling retailers to focus their efforts on the elements that would have the most significant impact on customer satisfaction and experience.

Retailers could leverage this information to systematically address customer pain points and enhance the overall shopping experience. For instance, if customers highlighted issues with website navigation or mobile app functionality, retailers could prioritize updates and improvements in these areas to ensure a smoother and more user-friendly digital experience. Similarly, if customers express concerns about the availability of product information or the consistency of pricing across channels, retailers could focus on standardizing these elements to build trust and confidence among their customer bases.

It was important to note, however, that the improvement order list should not be viewed in isolation. Retailers should also consider the significant elements identified in other findings of the research. While the improvement list provided valuable insights into customer perceptions, it might not always align perfectly with the elements that were statistically proven to significantly impact purchase intention. Therefore, retailers should prioritize addressing the significant elements identified in the research, such as product uniqueness, product information, price transparency, personalization service, and post-purchase service, alongside the improvement order list.

By integrating the improvement order list with the key significant elements, retailers could develop a comprehensive and balanced approach to enhancing their omnichannel strategies. This dual focused ensured that they were not only addressing immediate customer concerns but also strengthening the foundational aspects of their omnichannel experience that drive purchase intention. For example, while improving website functionality might be an immediate priority based on customer feedback, ensuring that product information was detailed and accurate remained a crucial ongoing effort.

In summary, the implications derived from this research pave the way for practitioners to refine their omnichannel strategies, ultimately enhancing customer experiences and loyalty. Additionally, the academic community could use these implications as a foundation for future research endeavored aimed at solving the dynamics of omnichannel retailing in diverse settings. The subsequent section outlined recommendations for future research, further extending the scholarly discourse in this domain.

6.3. Contributions to theoretical and practical aspects

This research made significant contributions to both theoretical understanding and practical applications of omnichannel retailing, particularly in the beauty care sector in Vietnam. One of the primary theoretical contributions of this study was the shift in focus towards the customer's perspective within the omnichannel retail framework. While existing literature predominantly addressed retailer strategies and implementations, this research highlighted how customers perceived and interact with omnichannel retail environments. This customer-centric approach enriched the theoretical understanding of consumer behavior in omnichannel contexts and underscored the importance of aligning retail strategies with customer expectations and experiences.

The study integrated various elements of the retail mix—such as product uniqueness, detailed product information, price transparency, and personalization service, post-purchase support —into the omnichannel framework. By demonstrating the significant impact of these elements on customer purchase intentions, the research provided a more nuanced understanding of how traditional retail mix factors operate within omnichannel environments. This theoretical integration offered a comprehensive model for analyzing consumer behavior across multiple channels.

The distinction between connectivity and consistency in omnichannel retailing was another critical theoretical contribution. The research demonstrated that connectivity—seamless interaction between different retail channels—had a higher impact on purchase intention compared to consistency—uniformity of experience across channels. These finding challenged existing theories that emphasized uniformity and highlighted the need for a more dynamic approach to understanding customer engagement in omnichannel settings.

By focusing on the Vietnam market, this study provided valuable theoretical insights into omnichannel retailing in emerging economies. The contextual findings offered a basis for comparative studies and further research into how omnichannel strategies could be adapted to different cultural and economic settings.

The practical implications of this research were profound for retailers aiming to enhance their omnichannel strategies. The findings provided actionable insights into which aspects of the retail mix most significantly influenced customer purchase intentions. Retailers could use these insights to prioritize investments in areas such as product information accuracy, pricing transparency, and enthusiastic customer service to drive customer engagement and satisfaction. The study highlighted the importance of connectivity over consistency in driving purchase intentions. Retailers could leverage this insight to develop strategies that enhance seamless interaction across different channels, ensuring that customers could easily navigate between online and offline platforms. This could include integrating inventory systems, synchronizing promotions, and ensuring consistent customer support across all touchpoints.

The research provided specific recommendations for retailers operating in the Vietnam beauty care market. Understanding the unique preferences and behaviors of Vietnamese consumers allowed retailers to tailor their omnichannel strategies to meet

local demands effectively. This could involve localizing content, offering region-specific promotions, and understanding cultural nuances that influenced shopping behavior. The study identified key areas for improvement in omnichannel retailing, such as enhancing product uniqueness and improving post-purchase support. Retailers could use this information to focus their efforts on specific elements that would most likely yield positive results in terms of customer satisfaction and loyalty.

In conclusion, this research bridged significant gaps in the existing literature by providing a comprehensive analysis of omnichannel retailing from the customer's perspective. It offered both theoretical advancements and practical guidance, making it a valuable resource for academics and practitioners alike who were looking to understand and implement effective omnichannel strategies.

6.4. Recommendations for Future Research

While this research provided valuable insights into the impact of omnichannel retail mix elements on customers' purchase intentions in the beauty care sector in Vietnam, there were several opportunities for future research that could deepen the understanding of this dynamic field.

As technology continues to evolve, exploring the impact of emerging technologies, such as augmented reality (AR) and virtual reality (VR), on omnichannel retailing could provide valuable insights. Understanding how customers respond to advanced technological features in their shopping journey could guide retailers in adopting innovative strategies.

With the growing emphasis on sustainability, future research could investigate how eco-friendly practices within omnichannel retailing influenced customer perceptions and purchase intentions. This could include an examination of sustainable sourcing, packaging, and overall corporate social responsibility initiatives.

To broaden the applicability of findings, future research might explore omnichannel retailing across diverse industries. Comparative studies between the beauty care sector and other sectors could revealed industry-specific patterns and uncover transferable insights applicable to a range of contexts.

While this research employed a mixed-method approach, future studies could conduct more in-depth qualitative investigations to capture the perspectives of customers, especially regarding their emotional and experiential aspects in omnichannel retailing. One important point was that this research did not create a framework to evaluate the omnichannel operations. In-depth interview with Confirmatory Factor Analysis research in the future could cover this gap.

These recommendations open opportunities for future research to address gaps in current knowledge and adapt to the evolving landscape of omnichannel retailing. By exploring these areas, researchers could contribute to a more comprehensive understanding of the factors influencing customer behaviors in the omnichannel environment.

6.5. Conclusion

In conclusion, this research delved into the complex landscape of omnichannel retailing within the beauty care sector in Vietnam. The study employed a mixed-method approach, combining qualitative opinions and quantitative analysis to comprehensively explore the impact of omnichannel retail mix elements on customers' purchase intentions. The following key conclusions emerged from the research.

Firstly, the omnichannel in this research was understood through integration concepts, which were measured by the connectivity and consistency levels. Omnichannel had a significant positive impact over the purchase intention in this research. Retailers who employed omnichannel strategy could gain more purchases from customers.

Secondly, between connectivity and consistency in omnichannel integration, the connectivity has more substantial impact on purchase intention than consistency. Retailers should allocate resources to enhance cross-channels connectivity, focusing on seamless customer experiences.

Thirdly, the research stresses the five retail elements that were significant to the purchase intention of customers. Product uniqueness, product information, price transparency, personalization service, and post-purchase support were important in the context of omnichannel retailing.

In terms of recommendations, this research suggested several opportunities for future exploration. These included the investigation of cultural variations, the impact of emerging technologies, sustainability practices, temporal dynamics, cross-industry comparative studies, and the influenced of external factors on omnichannel retailing.

In conclusion, this study contributed to the growing body of knowledge on omnichannel retailing within the beauty care sector. By understanding the interplay of various elements in the omnichannel retail mix, retailers could make informed decisions to enhance customer satisfaction, loyalty, and overall business success. As the retail landscape continues to evolve, ongoing research was crucial to staying attuned to customer preferences and adapting strategies accordingly.

APPENDIX

APPENDIX A

INTERVIEW GUIDE

QUALITATIVE QUESTIONAIRE

Question 1. With your expertise and experience in omnichannel retail area, please share your opinion about the key retail mix elements that significantly influenced customer engagement and purchase behavior in the context of omnichannel retailing?

Question 2. From your experience, how do you perceived the roles of different retail mix elements (product, price, place, promotion, people, process, physical evidence…) in creating a seamless and satisfying customer experience across various channels?

Question 3. In Vietnam market, which specific retail mix element do you believed plays the most crucial role in influencing customer loyalty and repurchase intention in an omnichannel retail environment?

INTERVIEWEES LIST

	Name of experts	Role and experiences
1	Dinh Mong Kha	CEO at Vietguys - Mobile Marketing; more than 15 years of experiences in FMCG
2	Nguyen Son Ha	General Manager at L'Oreal Luxe Philippines; more than 15 years of experiences in Beauty Marketing
3	Pham Minh Dung	Co-founder at Cocoon, the leading beauty brand in Vietnam; more than 15 years of experiences in Marketing
4	Tran Hung Thien	Founder at GCOM, the leading research company in Vietnam; more than 20 years of experiences in FMCG research
5	Thong Do	Founder at Palexy, the leading AI-based software development for retailers
6	Jack Nguyen	Vice President at Insider Asia, the leading platform for individualized, cross-channel customer experience
7	Duc Dao	Head of Ecommerce at Concung, the leading mum and baby retailer in Vietnam
8	Chi Nguyen	Senior Brand Manager at Lbeauty; more than 15 years of experiences in Marketing and Management
9	Ryan Phu Tran	General Manager of Consumer Product Division at L'Oreal Vietnam; more than 20 years of experiences in Beauty
10	Giao Huynh	General Manager at Judydoll; more than 20 years of experiences in FMCG and Beauty
11	Nguyen Quynh Anh	ex-General Manager at Viber; more than 20 years of experiences in strategy and management
12	Hoang Thi Minh Ngoc	Chief Growth Officer at ChoTot; more than 10 years of experiences in Marketing and Ecommerce
13	Thong Tran	Ex-Marketing Head at Guardian, the leading health and beauty retailer in Asia; more than 10 years of experiences in Marketing
14	Nhung Pham	Ex-Vertical Lead at Tiki, one of the top ecommerce market places; more than 20 years of experiences in FMCG Marketing
15	Nhung Truong	Vertical Lead at Meta Asia; more than 20 years of experiences in Marketing
16	Tran Bao Anh	Ex-Head of Ecommerce at L'Oreal; more than 15 years of experiences in Sales and Ecommerce
17	Nguyen Nhat Quynh	Founder at QOV; more than 20 years of experiences in FMCG and Beauty in Vietnam

18	Daniel Bang Nguyen	Ex-Health and Beauty Lead of Tiktok Vietnam; more than 10 years of experiences
19	Thuan Doan	Management Consultant; more than 15 years of experiences in Marketing and Management
20	Chi Doan	Ex-Chief Growth Officer at OnPoint; more than 20 years of experiences in Marketing
21	Giang Nguyen	Vertical Lead of TikTok Vietnam; more than 20 years of experiences in Sales and Ecommerce
22	Dinh Nguyen	Country Manager at Luxasia; more than 20 years of experiences in FMCG and Beauty
23	Uyen Vo	Ecommerce Manager at Guardian; more than 10 years of experiences in Marketing and Ecommerce
24	Thao Ngo	Senior Key Account Manager at L'Oreal; more than 10 years of experiences in Sales
25	Tu Duong	General Manager at Agricultural company; more than 20 years of experiences in Sales and General Management
26	Khanh Ngo	Deputy Director of Talented Programs at UEH - International School of Business
27	Loc Luu	Marketing Manager at CJ Foods; more than 10 years of experiences in Marketing
28	Tran Lan Anh	General Manager at Obagi; more than 20 years of experiences in Marketing and Management
29	Mai Nguyen	Head of Online at Finetoday; more than 15 years of experiences in Sales and Ecommerce
30	Phung Thanh Son	Ex-General Manager at Finetoday; more than 20 years of experiences in Sales and Management

APPENDIX B

SURVEY

SECTION 1: INTRODUCTION AND INFORMED CONSENT

Welcome to the research study on the " Impact Of Omnichannel Retailing On Customers' Purchase Decision Journey In The Consumer Goods Sector: A Case Of The Beauty Care Category In Vietnam." Your participation in this study was greatly appreciated as it contributed to our understanding of how the integration of different retail channels affected customer purchase intentions in the beauty care industry.

Study Objectives and Importance:

The main objective of this research was to assess the impact of omnichannel retail mix elements on customers' purchase intention within the beauty care category in Vietnam. By participating in this study, you would help us gain insights into how beauty care retailers could optimize their retail strategies to enhance customer experiences and purchase decisions.

Participant Confidentiality:

Your responses and personal information would be kept strictly confidential. All data collected would be used solely for research purposes and would be reported in an aggregated and anonymous manner. Your individual identity would not be disclosed in any publications or reports arising from this study.

Informed Consent:

Participation in this study was entirely voluntary. If you choose to participate, you could withdraw at any time without any consequences. Your decision to participate or decline would not impact your current or future relationship with the researchers, or any

organizations involved. By proceeding with this questionnaire, you indicated your willingness to participate in this study.

Contact Information:

If you have any questions, concerns, or would like further information about this study, you can contact the researchers at thucle75@gmail.com. Please keep a copy of this information for your records.

SECTION 2: DEMOGRAPHIC INFORMATION

S1	**Where were you living?** *Chosen 1 answer*	Code	Route
	Ho Chi Minh city	1	Continue
	Ha Noi	2	END
	Da Nang	3	
	Can Tho	4	
	Binh Duong	5	
	Bac Ninh	6	
	Other (Specify: .....)	99	

S2	**What was your gender?** *Chosen 1 answer*	Code	Route
	Male	1	END
	Female	2	CONTINUE

S3	**How old were you?** *Chosen 1 answer*	Code	Route
	Under 22 years old	1	END

	From 22 to 25 years old	2	CONTINUE
	From 26 to 30 years old	3	
	From 31 to 35 years old	4	
	Over 35 years old	5	END

S4	**Please indicated your marital status:** *Chosen 1 answer*	**Code**	**Route**
	Single	1	CONTINUE
	Married but no children	2	
	Married and have children	3	
	Divorced/widowed	4	
	Other (Please specify)	97	
	Refuse to answer	98	END

S5	**Please indicated your employment status:** *Chosen 1 answer*	**Code**	**Route**
	Student	1	CONTINUE
	Housewife	2	
	Hired	3	
	Self-employment/Business owner	4	

	Unemployed (looking for a job)	5	
	Refuse to answer	99	END

S6	**On average, how much do you pay for beauty products every month (e.g. skin care products, makeup, etc.)?** *Chosen 1 answer*	**Code**	**Route**
	Less than 4,000,000 VND	1	CONTINUE
	4,000,000 - 8,000,000 VND	2	
	8,000,001 - 12,000,000 VND	3	
	12,000,001 – 16,000,000 VND	4	
	16,000,001 - 20,000,000 VND	5	
	Over 20,000,000 VND	6	
	Do not actively pay for your own beauty care products	98	END

S7	**Which of the following statements best described your decision to purchase beauty care products for yourself?** *Chosen 1 answer*	**Code**	**Route**
	I am the main decision maker in choosing and purchasing the beauty care products that I have purchased	1	CONTINUE
	Do I take part in the process of choosing & purchasing the brands and beauty products that I have purchased?	2	CONTINUE
	I did not participate in the selection & decision of brands, beauty care products that I have purchased	3	END

	S8	**In the past 3 months, have you purchased any beauty products?** *Chosen 1 answer*		
			Code	**Route**
		Yes	1	CONTINUE
		No	2	END

S9	**Please estimate and indicated the average frequency of purchase of beauty care products (skin care products) over the past 3 months [SA]** *Chosen 1 answer*		
		S10a	**Route**

	3 months / time	1	**CONTINUE**
	2 months / time	2	
	1 month / time	3	
	1 week / time	4	

S10	**In the past 1 year, which of the following sales units have you purchased beauty care products?** *Choose multiple answers*	**Code**	**Route**
R1	Hasaki	1	
R2	Chiaki	2	
R3	Guardian	3	
R4	Watsons	4	
R5	SkinFood	5	
R6	Hadaiko	6	
R7	The Face Shop	7	
R8	Innisfree	8	
R9	Kiehl's	9	
R10	Laneign	10	
R11	The Body Shop	11	
R97	Other :…….	97	

S11	**[Display selected Rs in S10]** **For each of those units, on which platforms did you purchase products?** *Choose multiple answers*	Store's website	Store stalls on e-commerce platforms	Applications on electronic devices	Direct selling point
R1	Hasaki	1	2	3	4
R2	Chiaki	1	2	3	4
R3	Guardian	1	2	3	4
R4	Watsons	1	2	3	4
R5	Thế giới SkinFood	1	2	3	4
R6	Hadaiko	1	2	3	4
R7	The Face Shop	1	2	3	4
R8	Innisfree	1	2	3	4
R9	Kiehl’s	1	2	3	4
R10	Laneign	1	2	3	4
R11	The Body Shop	1	2	3	4
R97	Other:…….	1	2	3	4

S12	**[Display Rs selected with 2 or more codes in S11]** **Out of the sales units you've made omnichannel purchases,**	**Code**	Route

	which one did you buy the most from within the past 1 year? *Chosen 1 answer*		
R1	Hasaki	1	
R2	Chiaki	2	
R3	Guardian	3	
R4	Watsons	4	
R5	Thế giới SkinFood	5	
R6	Hadaiko	6	
R7	The Face Shop	7	
R8	Innisfree	8	
R9	Kiehl's	9	
R10	Laneign	10	
R11	The Body Shop	11	
R97	Other:…….	97	

SECTION 3: INTEGRATION LEVELS IN BEAUTY CARE RETAILERS

Q301	**How do you rate the degree of CONSISTENCY between sales channels (online, offline) of the sales unit? [show the code selected in S12]?** *Chosen 1 answer*	**Code**	Route
R1	Absolutely no consistency between channels	1	
R2	There was little consistency between channels	2	
R3	There was some information, activities were consistency between channels	3	
R4	A lot of information, activities were consistency between channels	4	
R5	All information and activities were consistency between channels	5	

Q302	**How do you rate the degree of CONNECTIVITY between sales channels (online, offline) of the sales unit? [show the code selected in S12]?***Chosen 1 answer*	**Code**	Route
R1	Absolutely no connectivity between channels	1	
R2	There was little connectivity between channels	2	
R3	There was some information, activities were connectivity	3	

	between channels		
R4	A lot of information, activities were connectivity between channels	4	
R5	All information and activities were connectivity between channels	5	

SECTION 4A: IMPACT OF RETAIL MIX ELEMENTS

Q401	**On a scale of 1 to 5, please indicated your AGREEMENT with each of the following statements about your behavior in choosing & purchasing beauty products at [show the code selected in S12]:** 1. ***Totally disagree*** 2. ***Disagree*** 3. ***Neutral*** 4. ***Agree*** 5. ***Totally agreed*** *Chosen 1 answer at each row (each statement)*					
		1 - Totally disagree	**2- Agree**	**3 – Neutral**	**4 – Agree**	**5 – Totally agreed**
R1	I often use **[show the code selected in S12]** online channels to find out product information	1	2	3	4	5

R2	I could find many discount codes, promotions of **[show the code selected in S12]** when I follow many different sales channels (website, direct selling point, application, ...)	1	2	3	4	5
R3	I usually wait until the big sale (eg Black Friday, 1/1, 2/2, ...) to bought beauty care products at **[show the code selected in S12]**	1	2	3	4	5
R4	I often sought advice and support from the consultant at **[show**	1	2	3	4	5

	the code selected in S12] when choosing to bought beauty care products.					
R5	I would definitely continue buying products at **[show the code selected in S12]**	1	2	3	4	5
R6	I am willing to pay more to bought products at **[show the code selected in S12]**	1	2	3	4	5

Q402	**On a scale of 1 to 5, please indicated the IMPACT of each of the following factors on your BUYING DECISION for beauty products at [show the code selected in S12]?** 1. ***Totally no influenced*** 2. ***No influenced*** 3. ***Neutral*** 4. ***Have influenced***

	5. Have significant influenced *Chosen 1 answer ở mỗi hàng ngang (mỗi yếu tố)*					
		1 – Totally no influenced	**2- No influenced**	**3 – Neutral**	**4 – Have influenced**	**5 – Have significant influenced**
	Product					
R1	The uniqeness or exclusivity of a beauty care product	1	2	3	4	5
R2	The availability of detailed product information, such as	1	2	3	4	5

	ingredient lists and usage instructions					
R3	The accuracy of product information	1	2	3	4	5
	Price					
R4	Frequenc y of promotions	1	2	3	4	5
R5	*The transparency of pricing information*	1	2	3	4	5
R6	*The availability of flexible payment options (e.g., installment plans, online payment methods)*	1	2	3	4	5

R7	*Loyalty programs, such as point accumulation and rewards*	1	2	3	4	5
	Service					
R8	*The level of enthusiasm of the consultants and support staff*	1	2	3	4	5
R9	*The availability to personalized recommendations, purchase recommendations from consultants, support*	1	2	3	4	5
R10	*Level of interest, post-*	1	2	3	4	5

	purchase support					

Q403	**What points should be improved so that you were ready to stick and continue to bought more products at [show the code selected in S12]??** *Choose multiple answers*	**Code**	**Route**
R1	The uniqueness or exclusivity of a beauty care product	1	
R2	The availability of detailed product information, such as ingredient lists and usage instructions	2	
R3	The availability of detailed and accurate product information	3	
R4	Frequency of promotions	4	
R5	The transparency of pricing information	5	
R6	The availability of flexible payment options (e.g., installment plans, online payment methods)	6	

R7	Loyalty programs, such as points accumulation and rewards	7	
R8	The level of enthusiasm of the consultants and support staff	8	
R9	The ability to personalize recommendations, purchase recommendations from consultants, support	9	
R10	Level of interest, post-purchase support	10	

APPENDIX C

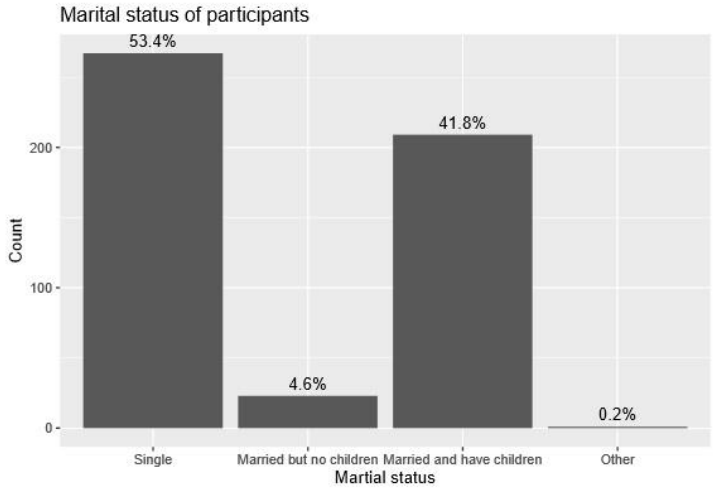
R Code in data analysis

Omnichannel

2024-01-13

Demographic description

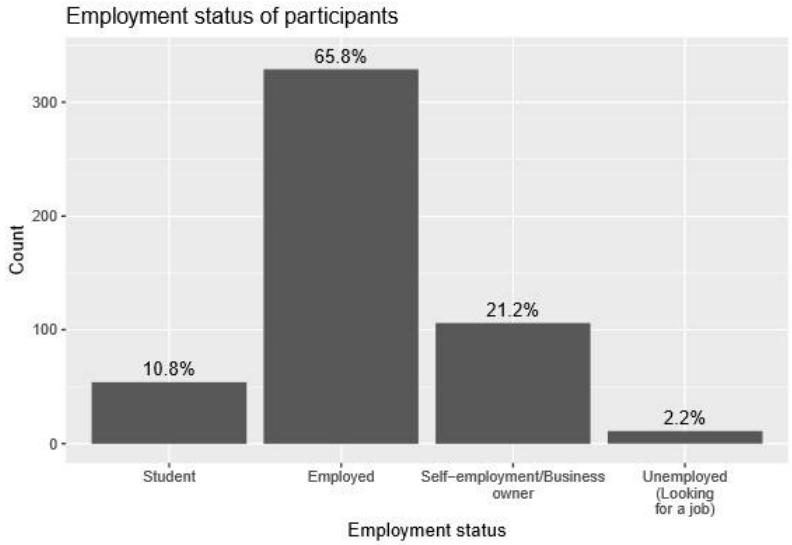
```
data %>% count(marital = factor(marital)) %>%
  mutate(per = paste(as.character(prop.table(n)*100),'%',sep = '')) %>%
  ggplot(aes(marital, n))+
  geom_col()+
  geom_text(aes(label=per), vjust = -0.5)+
  labs(title = 'Marital status of participants',x = 'Martial status', y = 'Count')
```




```
data %>% count(employment = factor(employment)) %>%
  mutate(per = paste(as.character(prop.table(n)*100),'%',sep = '')) %>%
  ggplot(aes(employment, n))+
  geom_col()+
  geom_text(aes(label=per), vjust = -0.5)+
```

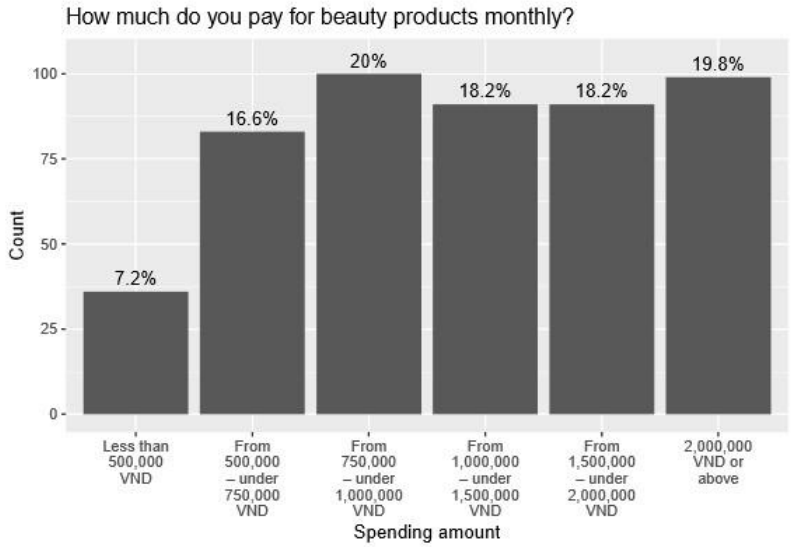
1

```
  labs(title = 'Employment status of participants',x = 'Employment status', y = 'Count')+
  scale_x_discrete(labels = function(x) str_wrap(x, width = 10))+
  ylim(0,340)
```

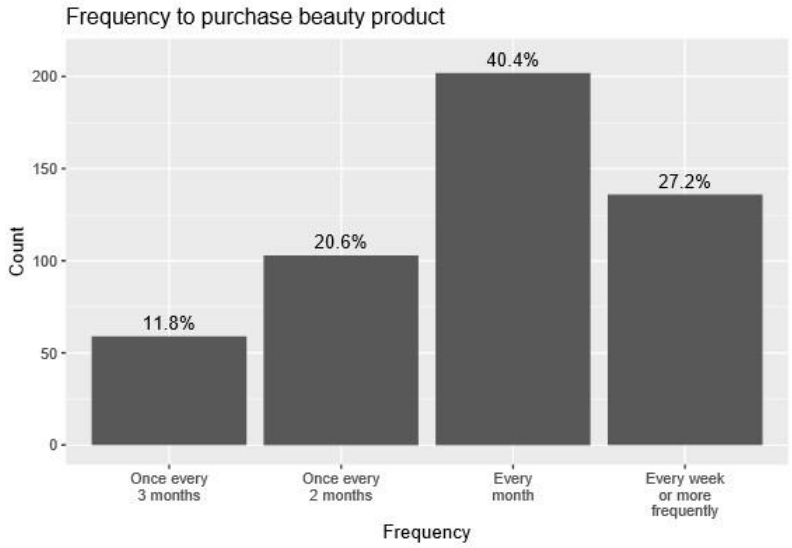


Buying behaviors of participants

```
data %>% count(spending = factor(spending)) %>%
  mutate(per = paste(as.character(prop.table(n)*100),'%',sep = '')) %>%
  ggplot(aes(spending, n))+
  geom_col()+
  geom_text(aes(label=per), vjust = -0.5)+
  labs(title = 'How much do you pay for beauty products monthly?',
       x = 'Spending amount', y = 'Count')+
  scale_x_discrete(labels = function(x) str_wrap(x, width = 10))+
  ylim(0,105)
```

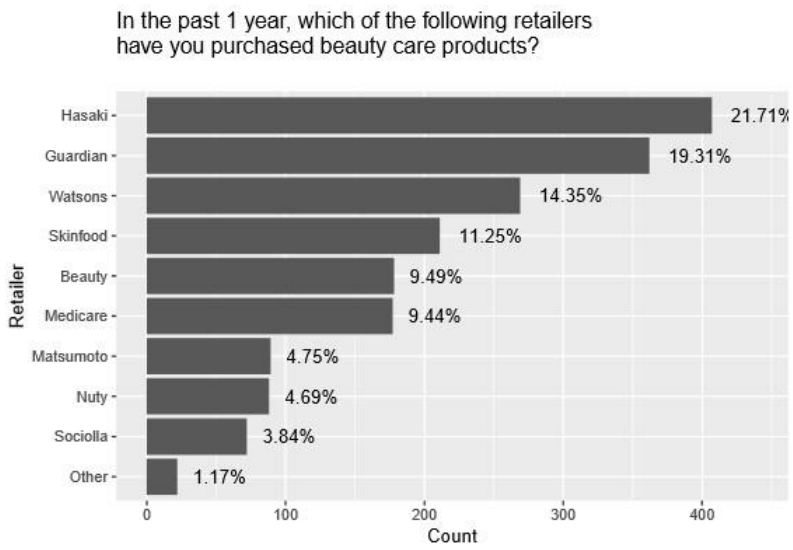



```
data %>% count(freq = factor(freq)) %>%
  mutate(per = paste(as.character(prop.table(n)*100),'%',sep = '')) %>%
  ggplot(aes(freq, n))+
  geom_col()+
  geom_text(aes(label=per), vjust = -0.5)+
  labs(title = 'Frequency to purchase beauty product',
       x = 'Frequency', y = 'Count')+
  scale_x_discrete(labels = function(x) str_wrap(x, width = 10))+
  ylim(0,210)
```

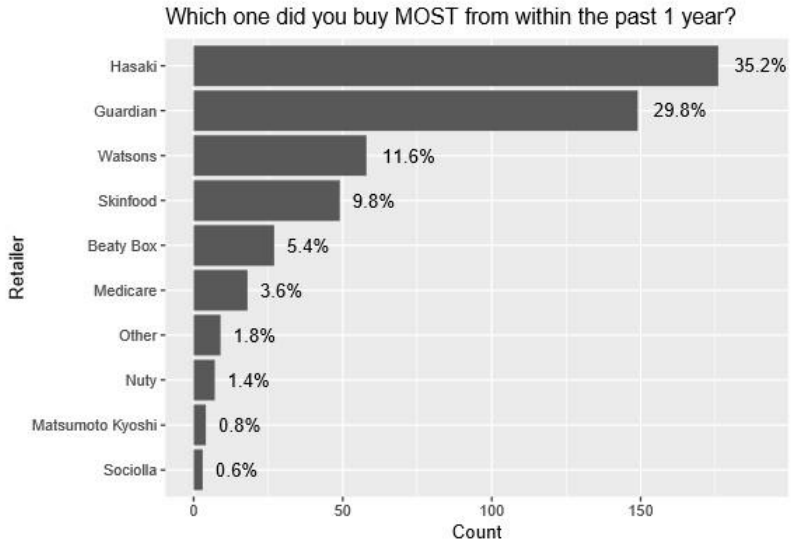



```
data %>% select(starts_with('retailer_')) %>%
  pivot_longer(cols = 'retailer_guardian':'retailer_other',
               names_to = 'retailer',
               values_to = 'yes') -> retailer
retailer$retailer <- substr(retailer$retailer, 10, length(retailer$retailer))
retailer$retailer <- factor(retailer$retailer)

retailer$retailer <- str_to_title(retailer$retailer)
retailer %>% group_by(retailer) %>%
  summarise(count = sum(yes)) %>%
  mutate(percentage = 100*count/1875) %>%
  arrange(desc(percentage)) %>%
  ggplot(aes(y=reorder(retailer, count), x=count))+
    geom_bar(stat = 'identity')+
    labs(title = 'In the past 1 year, which of the following retailers\nhave you purchased beauty care |
', y = 'Retailer', x = 'Count')+
  geom_text(aes(label = paste(as.character(round(percentage,2)),'%', sep =''), hjust = -0.3))+
  xlim(0,440)
```

4




```
mostchoice <- data %>% group_by(most) %>%
  summarise(count = n()) %>%
  rename('retailer'= 'most')
mostchoice %>% group_by(retailer) %>%
  mutate(percentage = 100*count/500) %>%
  arrange(desc(percentage)) %>%
  ggplot(aes(y=reorder(retailer, count), x=count))+
  geom_bar(stat = 'identity')+
  labs(title = 'Which one did you buy MOST from within the past 1 year?',x= 'Count', y = 'Retailer')+
  geom_text(aes(label = paste(as.character(round(percentage,2)),'%', sep =''), hjust = -0.3))+
  xlim(0,190)
```



Data divided by demographic

```
#New recode
data$spending <- plyr::revalue(data$spending, c("Less than 500,000 VND" = "Less than 1 million",
                        "From 500,000 - under 750,000 VND" = "Less than 1 million",
                        "From 750,000 - under 1,000,000 VND" = "Less than 1 million",
                        "From 1,000,000 - under 1,500,000 VND" = "Less than 2 million",
                        "From 1,500,000 - under 2,000,000 VND" = "Less than 2 million",
                        "2,000,000 VND or above" = "More than 2 million"))

data$freq <- plyr::revalue(data$freq, c("Once every 3 months" = "Less frequent",
                                "Once every 2 months" = "Less frequent",
                                "Every month" = "Frequent",
                                "Every week or more frequently" = "Very frequent"))
data %>% select(marital)%>%
  filter(marital %in% c('Single','Married and have children')) %>%
  group_by(marital) %>%
  summarise(n())
```

```
## # A tibble: 2 x 2
##   marital                  `n()`
##   <fct>                    <int>
## 1 Single                     267
```

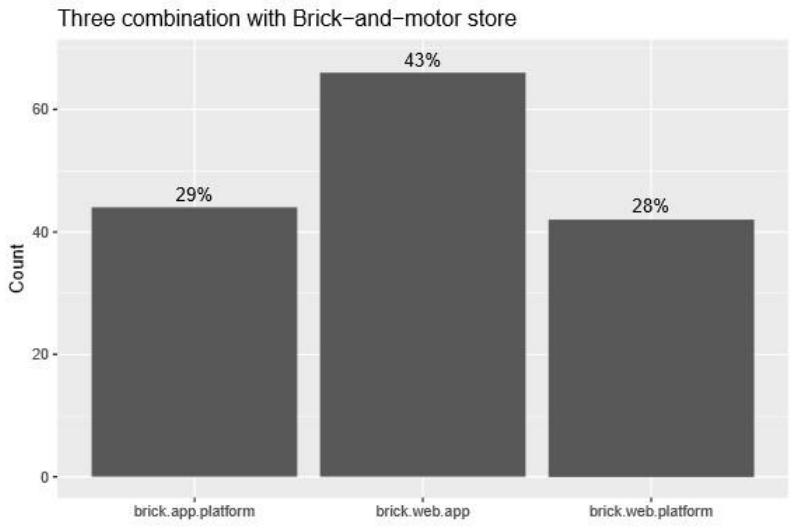
2 Married and have children 209

Channel combination

```
#Channel combination data
data %>% select(ends_with('_web')) %>%
  mutate(web = rowSums(., na.rm = TRUE)) %>%
  select(web) -> web
data %>% select(ends_with('_brick')) %>%
  mutate(brick = rowSums(., na.rm = TRUE)) %>%
  select(brick) -> brick
data %>% select(ends_with('_app')) %>%
  mutate(app = rowSums(., na.rm = TRUE)) %>%
  select(app) -> app
data %>% select(ends_with('_platform')) %>%
  mutate(platform = rowSums(., na.rm = TRUE)) %>%
  select(platform) -> platform

channel <- brick %>%
  cbind(web) %>%
  cbind(app) %>%
  cbind(platform)

channel <- channel %>%
  rowwise() %>%
  dplyr::mutate(num.channel = 4-sum(c_across(everything()) == 0))

channel <- channel %>% rowwise() %>%
  mutate(brick.web = ifelse(num.channel == 2 & brick > 0 & web > 0,TRUE,FALSE),
         brick.app = ifelse(num.channel == 2 & brick > 0 & app > 0,TRUE,FALSE),
         brick.platform = ifelse(num.channel == 2 & brick > 0 & platform > 0,
                                 TRUE,FALSE),
         brick.web.app = ifelse(num.channel == 3 & brick> 0 & web> 0 & app > 0,
                                TRUE,FALSE),
         brick.web.platform= ifelse(num.channel == 3 & brick > 0 & web> 0
                                    & platform > 0,TRUE,FALSE),
         brick.app.platform= ifelse(num.channel == 3 & brick> 0 & platform > 0
                                    & app > 0,TRUE,FALSE))
```

```
channel %>% select(brick.web.app, brick.app.platform, brick.web.platform) %>%
  pivot_longer(cols = 1:3,
               names_to = 'type',
               values_to = 'yes') %>%
  group_by(type) %>%
  summarise(n = sum(yes)) %>%
  mutate(per = paste(as.character(round(prop.table(n)*100),4),'%',sep = '')) %>%
  ggplot(aes(type, n))+
  geom_col()+
  geom_text(aes(label=per), vjust = -0.5)+
  labs(title = 'Three combination with Brick-and-motor store',
       x = '', y = 'Count')+
```

```
ylim(0,68)
```

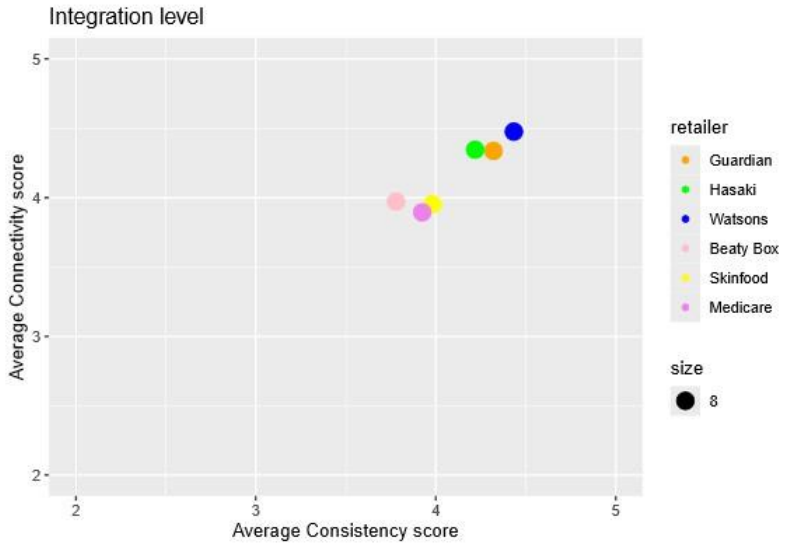


H1: Omnichannel integration level

All data

```
mostchoice <- data %>% group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most')
secondchoice <- data %>% group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second')
thirdchoice <- data %>% group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
```

```
  rename('retailer' = 'third') %>%
  mutate(choice = 'third')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  filter(retailer != 'Other') %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point),
            connect.point = mean(connect.point),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, size = 8))+
  geom_point(aes(colour = retailer))+
  labs(title = 'Integration level',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```



9

```r
d1 <- data %>% select(most, connect_most, consis_most) %>%
  rename('retailer' = 'most',
         'connect' = 'connect_most',
         'consis' = 'consis_most') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE)
d2 <- data %>% select(second, connect_second, consis_second) %>%
  rename('retailer' = 'second',
         'connect' = 'connect_second',
         'consis' = 'consis_second') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE)
d3 <- data %>% select(third, connect_third, consis_third) %>%
  rename('retailer' = 'third',
         'connect' = 'connect_third',
         'consis' = 'consis_third') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE)
d <- rbind(d1, rbind(d2,d3))
```

```r
z <- aov(connect ~ retailer, data =d)
summary(z)
```

```
##               Df Sum Sq Mean Sq F value   Pr(>F)
## retailer       8   42.9   5.364   5.136 2.68e-06 ***
## Residuals   1043 1089.3   1.044
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

p-value < 0, there is difference in connectivity point among retailers.

For consistency score

```r
z <- aov(consis ~ retailer, data =d)
summary(z)
```

```
##               Df Sum Sq Mean Sq F value   Pr(>F)
## retailer       8     49   6.119   5.117 2.86e-06 ***
## Residuals   1043   1247   1.196
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

p-value < 0, there is difference in consistency point among retailers. To check for the overall integration level, we use the formulat: Integration = Connectivity x Consistency, and use this variable to check for the difference amongst retailers.

```r
d <- d %>% mutate(integration = connect*consis)
z <- aov(integration ~ retailer, data =d)
summary(z)
```

```
##               Df Sum Sq Mean Sq F value  Pr(>F)
## retailer       8   2688   336.0   6.678 1.5e-08 ***
## Residuals   1043  52475    50.3
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

p-value < 0, there is difference in integration point among retailers.

```r
z <- lm(integration ~ retailer, data = d)
summary(z)
```

```
##
## Call:
## lm(formula = integration ~ retailer, data = d)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -18.226  -4.500   1.762   5.774  10.500
##
## Coefficients:
##                            Estimate Std. Error t value Pr(>|t|)
## (Intercept)                 19.2264     0.4357  44.125  < 2e-16 ***
## retailerHasaki              -0.9883     0.5912  -1.672 0.094905 .
## retailerWatsons              0.9809     0.7047   1.392 0.164248
## retailerMatsumoto Kyoshi    -2.7264     1.7277  -1.578 0.114853
## retailerNuty                -4.2978     1.4095  -3.049 0.002352 **
## retailerBeaty Box           -3.0292     0.9479  -3.196 0.001436 **
## retailerSociolla            -4.7264     1.9451  -2.430 0.015272 *
## retailerSkinfood            -3.0719     0.8045  -3.818 0.000142 ***
## retailerMedicare            -3.6742     0.9699  -3.788 0.000160 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 7.093 on 1043 degrees of freedom
## Multiple R-squared:  0.04873,    Adjusted R-squared:  0.04143
## F-statistic: 6.678 on 8 and 1043 DF,  p-value: 1.504e-08
```

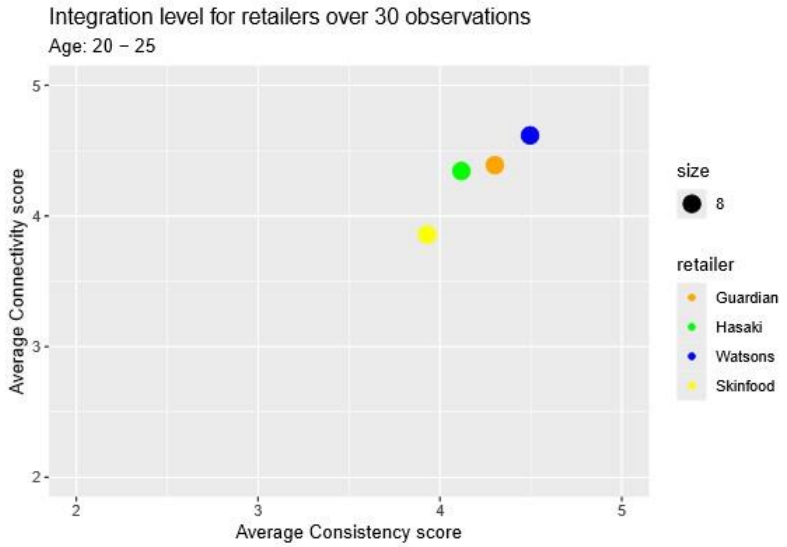
Demographic groups

```r
d1 <- data %>% select(most, connect_most, consis_most,age,marital,spending,employment,freq) %>%
  rename('retailer' = 'most',
         'connect' = 'connect_most',
         'consis' = 'consis_most') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE)
d2 <- data %>% select(second, connect_second, consis_second,age,marital,spending,employment,freq) %>%
  rename('retailer' = 'second',
         'connect' = 'connect_second',
         'consis' = 'consis_second') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE)
d3 <- data %>% select(third, connect_third, consis_third,age,marital,spending,employment,freq) %>%
  rename('retailer' = 'third',
         'connect' = 'connect_third',
         'consis' = 'consis_third') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE)
d <- rbind(d1, rbind(d2,d3)) %>% mutate(integration = connect*consis)
```

Age

```r
mostchoice <- data %>%
  filter(age == 'From 20 to 25 years old') %>%
```

```
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(age == 'From 20 to 25 years old') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(age == 'From 20 to 25 years old') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Age: 20 - 25',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(age == 'From 20 to 25 years old')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   50.2   6.272   6.071 1.82e-07 ***
## Residuals   494  510.4   1.033
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(consis ~ retailer, data = dz))
```

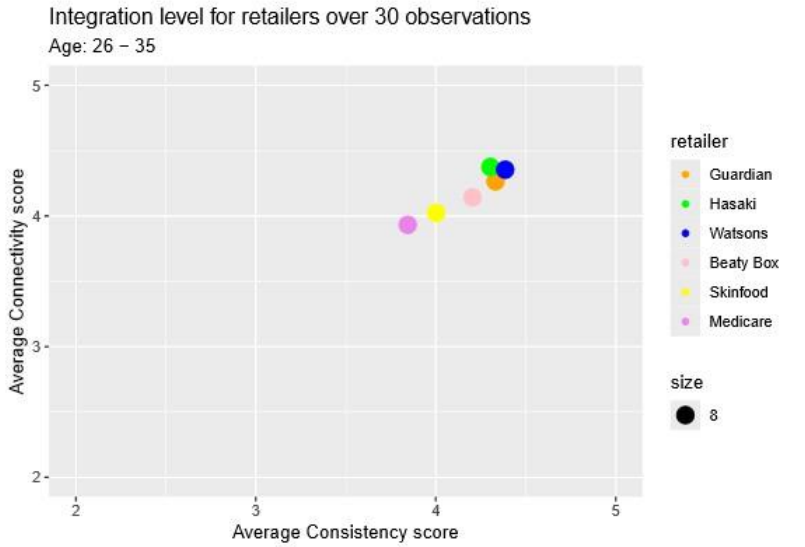
```
##              Df Sum Sq Mean Sq F value  Pr(>F)
## retailer      8   56.9   7.112   5.733 5.4e-07 ***
## Residuals   494  612.9   1.241
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   2714   339.2   6.835 1.56e-08 ***
## Residuals   494  24519    49.6
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the age group 'From 20 to 25 years old', there are statistically significant difference among retailers in: connectivity, consistency, and integration.

```
mostchoice <- data %>%
  filter(age == 'From 26 to 35 years old') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(age == 'From 26 to 35 years old') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(age == 'From 26 to 35 years old') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Age: 26 - 35',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(age == 'From 26 to 35 years old')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   11.6   1.447   1.397  0.195
## Residuals   540  559.5   1.036
```

```
summary(aov(consis ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   22.4   2.797   2.507 0.0111 *
## Residuals   540  602.5   1.116
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

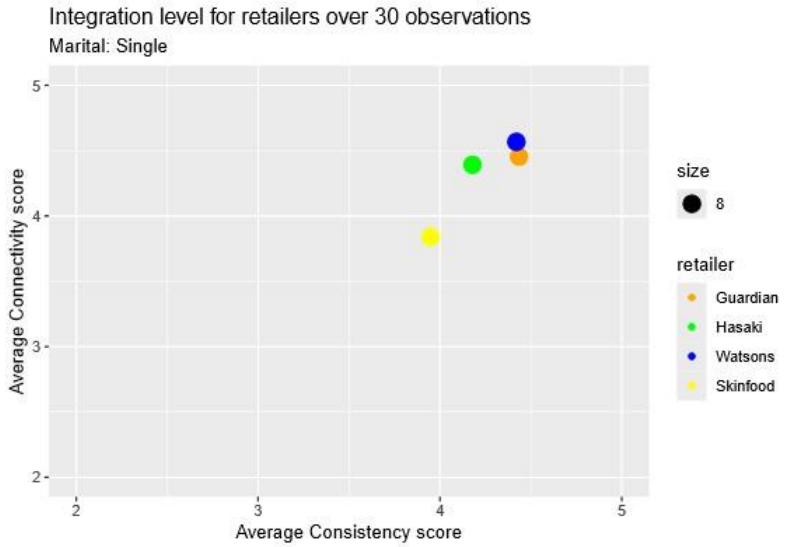
```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8    961  120.07    2.41 0.0146 *
## Residuals   540  26903   49.82
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the age group 'From 26 to 35 years old', there are statistically significant difference among retailers in: Consistency and Integration, however, the relationship is weak.

Marital

```
mostchoice <- data %>%
  filter(marital == 'Single') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(marital == 'Single') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(marital == 'Single') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Marital: Single',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(marital == 'Single')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   45.6   5.700   5.868 3.31e-07 ***
## Residuals   532  516.7   0.971
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(consis ~ retailer, data = dz))
```

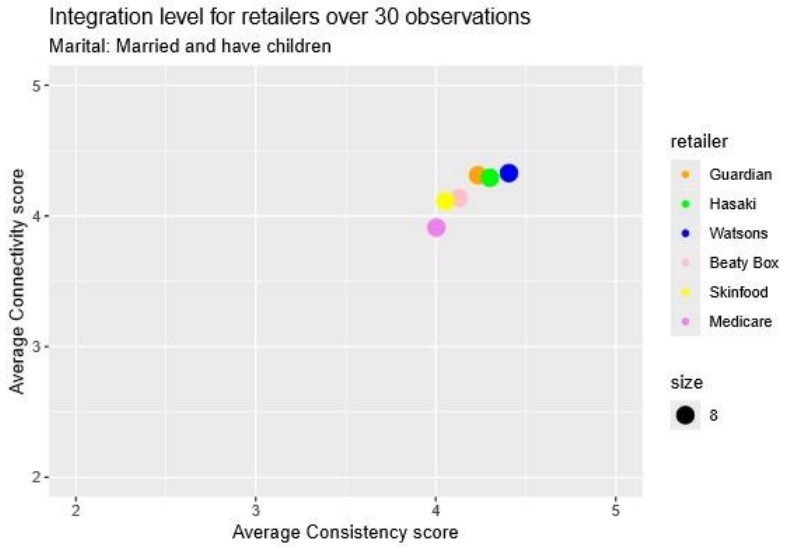
```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   41.2   5.154   4.372 3.96e-05 ***
## Residuals   532  627.1   1.179
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   2466  308.23   6.231 1.03e-07 ***
## Residuals   532  26316   49.47
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the marital group 'Single', there are statistically significant difference among retailers in: connectivity, consistency, and integration.

```
mostchoice <- data %>%
  filter(marital == 'Married and have children') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(marital == 'Married and have children') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(marital == 'Married and have children') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Marital: Married and have children',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(marital == 'Married and have children')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   11.8   1.471   1.379  0.203
## Residuals   460  490.8   1.067
```

```
summary(aov(consis ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   22.6   2.819   2.538 0.0103 *
## Residuals   460  510.9   1.111
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

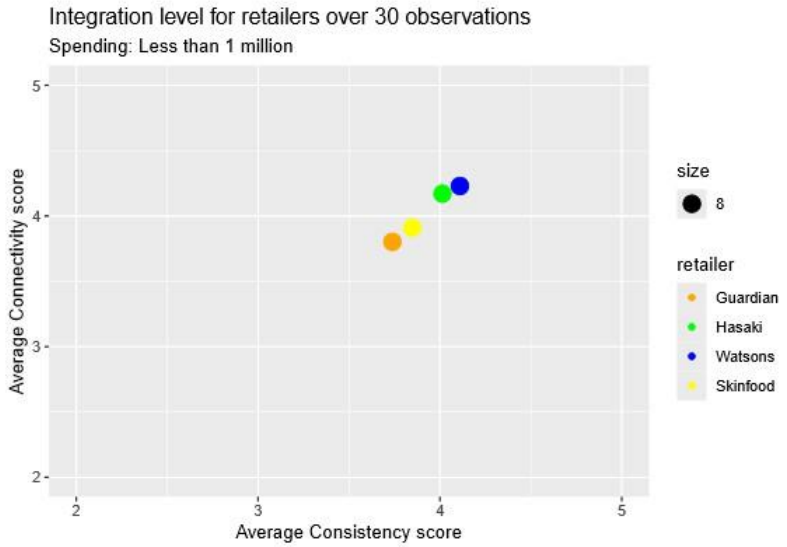
```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8    952  119.04   2.448 0.0133 *
## Residuals   460  22369   48.63
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the marital group 'Married and have children', there are statistically significant difference among retailers in: Consistency and integration. However, the relationship is weak.

Spending

```
mostchoice <- data %>%
  filter(spending == 'Less than 1 million') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(spending == 'Less than 1 million') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(spending == 'Less than 1 million') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Spending: Less than 1 million',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(spending == 'Less than 1 million')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   12.1   1.518   1.326  0.229
## Residuals   385  440.7   1.145
```

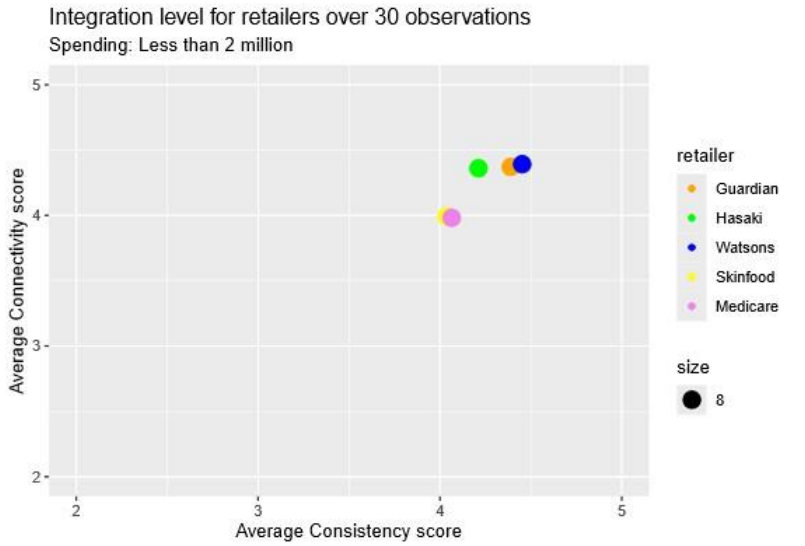
```
summary(aov(consis ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   23.8   2.978   2.186 0.0278 *
## Residuals   385  524.5   1.362
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8    783   97.93   1.928 0.0546 .
## Residuals   385  19555   50.79
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the spending group 'Less than 1 million', there are statistically significant difference among retailers in: Consistency. However, the relationship is weak.




```
dz <- d %>% filter(spending == 'Less than 2 million')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   15.3   1.918   1.731 0.0894 .
## Residuals   410  454.2   1.108
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(consis ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value  Pr(>F)
## retailer      8   23.6   2.953   2.607 0.00862 **
## Residuals   410  464.3   1.133
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

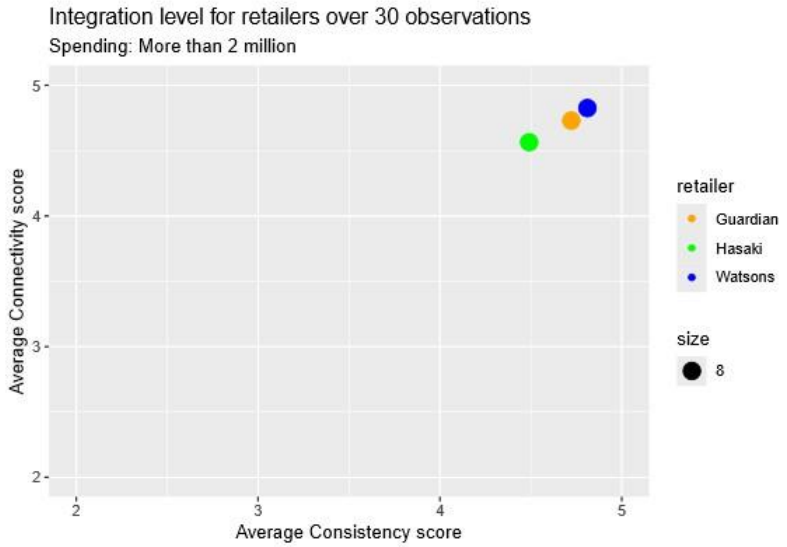
```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value  Pr(>F)
## retailer      8   1203  150.41   2.935 0.00336 **
```

```
## Residuals   410  21009   51.24
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the spending group 'Less than 2 million', there are statistically significant difference among retailers in: consistency and integration.

```
mostchoice <- data %>%
  filter(spending == 'More than 2 million') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(spending == 'More than 2 million') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(spending == 'More than 2 million') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Spending: More than 2 million',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(spending == 'More than 2 million')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8  24.34  3.0427   4.622  3e-05 ***
## Residuals   230 151.41  0.6583
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(consis ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value  Pr(>F)
## retailer      8  18.03  2.2534   2.821 0.00528 **
## Residuals   230 183.70  0.7987
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

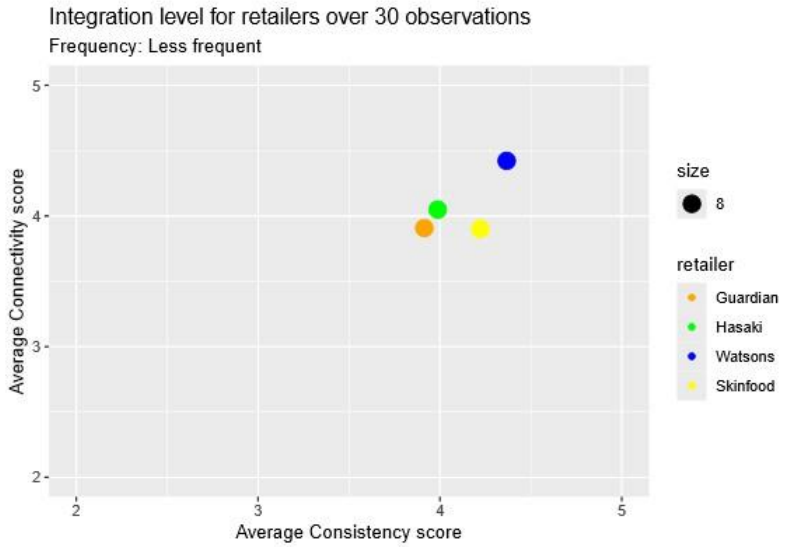
```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   1282  160.21    4.53 3.93e-05 ***
## Residuals   230   8135   35.37
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the spending group 'More than 2 million', there are statistically significant difference among retailers in: connectivity, consistency, and integration.

Frequency

```
mostchoice <- data %>%
  filter(freq == 'Less frequent') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(freq == 'Less frequent') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(freq == 'Less frequent') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Frequency: Less frequent',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(freq == 'Less frequent')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   14.3   1.790   1.513  0.152
## Residuals   288  340.8   1.183
```

```
summary(aov(consis ~ retailer, data = dz))
```

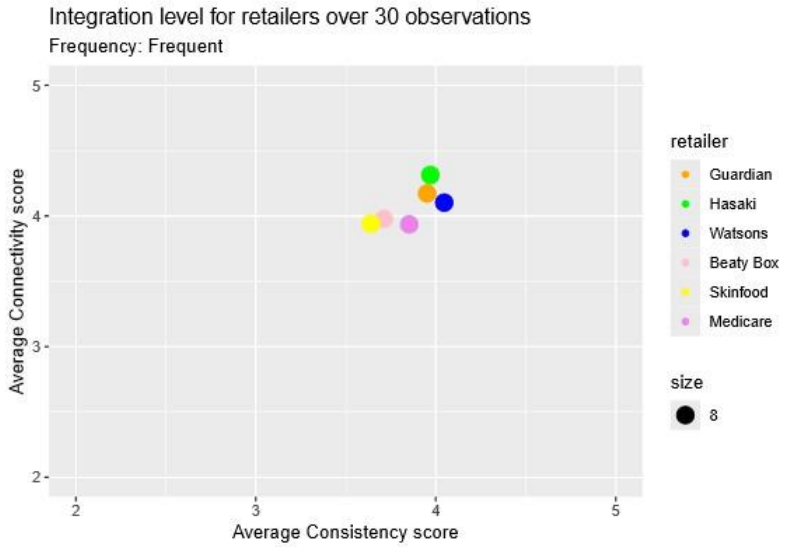
```
##              Df Sum Sq Mean Sq F value  Pr(>F)
## retailer      8   27.5   3.434   2.662 0.00781 **
## Residuals   288  371.5   1.290
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8    859   107.3   2.092 0.0365 *
## Residuals   288  14773    51.3
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the frequency group 'Less frequent', there are statistically significant difference among retailers in: consistency, and integration.

```
mostchoice <- data %>%
  filter(freq == 'Frequent') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(freq == 'Frequent') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(freq == 'Frequent') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Frequency: Frequent',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(freq == 'Frequent')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   11.1   1.381   1.271  0.257
## Residuals   389  422.9   1.087
```

```
summary(aov(consis ~ retailer, data = dz))
```

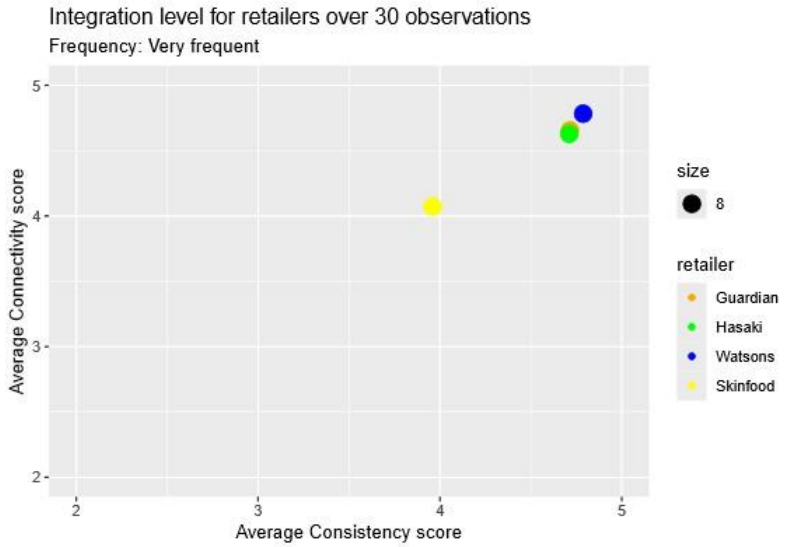
```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8    9.8   1.224   0.898  0.518
## Residuals   389  530.5   1.364
```

```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8    599   74.93   1.456  0.172
## Residuals   389  20012   51.45
```

For the frequency group 'Frequent', there are statistically significant difference among retailers in: none.

```r
mostchoice <- data %>%
  filter(freq == 'Very frequent') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(freq == 'Very frequent') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(freq == 'Very frequent') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Frequency: Very frequent',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(freq == 'Very frequent')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8  35.71   4.464   6.282 1.32e-07 ***
## Residuals   348 247.28   0.711
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(consis ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8  34.27   4.284   6.699 3.63e-08 ***
## Residuals   348 222.54   0.639
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

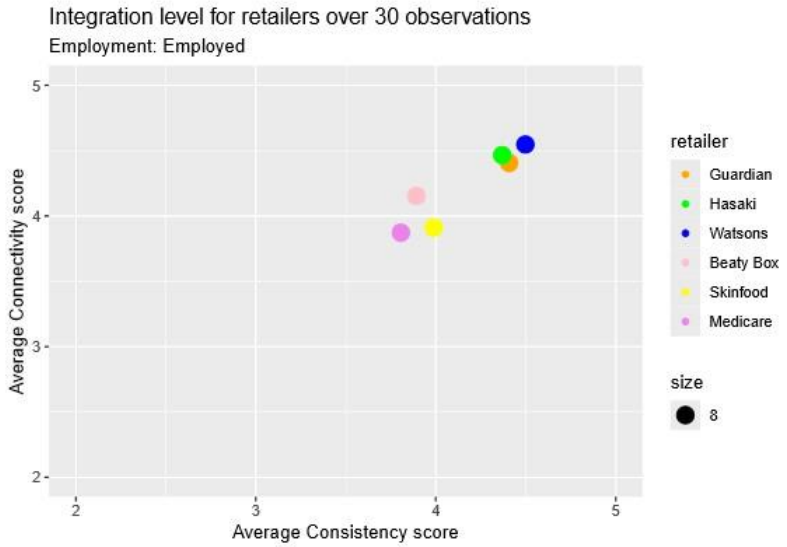
```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   2157   269.6   8.196 3.58e-10 ***
## Residuals   348  11449    32.9
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the frequency group 'Very frequent', there are statistically significant difference among retailers in: connectivity, consistency, and integration.

Employment

```
mostchoice <- data %>%
  filter(employment == 'Employed') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(employment == 'Employed') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(employment == 'Employed') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Employment: Employed',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(employment == 'Employed')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   32.9   4.110    4.57 1.91e-05 ***
## Residuals   711  639.4   0.899
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(consis ~ retailer, data = dz))
```

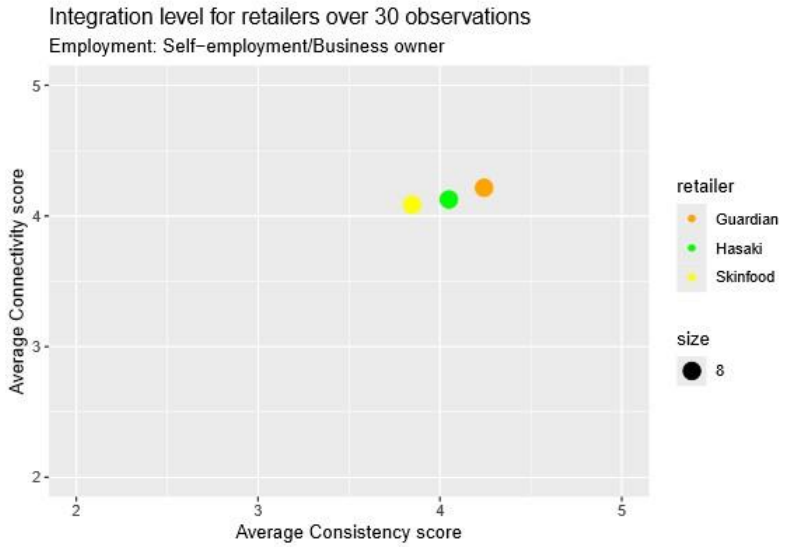
```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   35.6   4.450   4.023 0.000109 ***
## Residuals   711  786.4   1.106
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value   Pr(>F)
## retailer      8   2141   267.7   5.732 4.34e-07 ***
## Residuals   711  33206    46.7
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the employment group 'Employed', there are statistically significant difference among retailers in: connectivity, consistency, and integration.

```
mostchoice <- data %>%
  filter(employment == 'Self-employment/Business owner') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(employment == 'Self-employment/Business owner') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(employment == 'Self-employment/Business owner') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  filter(count >= 30) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers over 30 observations',
       subtitle = 'Employment: Self-employment/Business owner',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```




```
dz <- d %>% filter(employment == 'Self-employment/Business owner')
summary(aov(connect ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8   20.4   2.550   2.236  0.026 *
## Residuals   218  248.6   1.141
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(consis ~ retailer, data = dz))
```

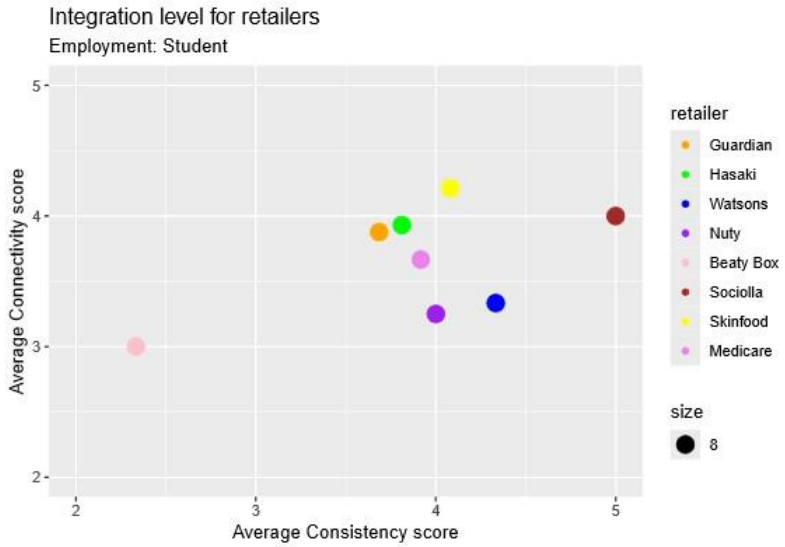
```
##              Df Sum Sq Mean Sq F value  Pr(>F)
## retailer      8  28.03   3.504   3.149 0.00215 **
## Residuals   218 242.54   1.113
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
summary(aov(integration ~ retailer, data = dz))
```

```
##              Df Sum Sq Mean Sq F value Pr(>F)
## retailer      8    992  123.95   2.496  0.013 *
## Residuals   218  10825   49.66
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

For the employment group 'Self-employment/Business owner', there are statistically significant difference among retailers in: connectivity, consistency, and integration.

```
mostchoice <- data %>%
  filter(employment == 'Student') %>%
  group_by(most) %>%
  summarise(consis.point = mean(consis_most, na.rm = TRUE),
            connect.point = mean(connect_most, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'most') %>%
  mutate(choice = 'most') %>% filter(retailer != 'Other')
secondchoice <- data %>%
  filter(employment == 'Student') %>%
  group_by(second) %>%
  summarise(consis.point = mean(consis_second, na.rm = TRUE),
            connect.point = mean(connect_second, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'second') %>%
  mutate(choice = 'second') %>% filter(retailer != 'Other')
thirdchoice <- data %>%
  filter(employment == 'Student') %>%
  group_by(third) %>%
  summarise(consis.point = mean(consis_third, na.rm = TRUE),
            connect.point = mean(connect_third, na.rm = TRUE),
            count = n()) %>%
  rename('retailer' = 'third') %>%
  mutate(choice = 'third') %>% filter(retailer != 'Other')

rbind(mostchoice, rbind(secondchoice, thirdchoice)) %>%
  group_by(retailer) %>%
  summarise(consis.point = mean(consis.point, na.rm = TRUE),
            connect.point = mean(connect.point, na.rm = TRUE),
            count = sum(count)) %>%
  ggplot(aes(x = consis.point, y = connect.point, color = retailer, size = 8))+
  geom_point()+
  labs(title = 'Integration level for retailers',
       subtitle = 'Employment: Student',
       x = 'Average Consistency score',
       y = 'Average Connectivity score')+
  ylim(2,5)+xlim(2,5)+
  scale_color_manual(values = c('Guardian'='orange',
                                'Hasaki' = 'green',
                                'Watsons' = 'blue',
                                'Matsumoto Kyoshi' = 'red',
                                'Nuty' = 'purple',
                                'Beaty Box' = 'pink',
                                'Sociolla' = 'brown',
                                'Skinfood' = 'yellow',
                                'Medicare' = 'violet'))
```



Correlation

All data Create a subdata set for this part

```
d1 <- data %>% select(most, connect_most, consis_most,age,marital,spending,employment,freq,intention_mo
  rename('retailer' = 'most',
         'connect' = 'connect_most',
         'consis' = 'consis_most',
         'intention'='intention_most') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE) %>%
  mutate(choice = 'most')
d2 <- data %>% select(second, connect_second, consis_second,age,marital,spending,employment,freq,intent
  rename('retailer' = 'second',
         'connect' = 'connect_second',
         'consis' = 'consis_second',
         'intention'='intention_second') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE) %
  mutate(choice = 'second')
d3 <- data %>% select(third, connect_third, consis_third,age,marital,spending,employment,freq,intention
  rename('retailer' = 'third',
         'connect' = 'connect_third',
         'consis' = 'consis_third',
         'intention'='intention_third') %>% filter(is.na(connect) == FALSE & is.na(consis) == FALSE) %>
  mutate(choice = 'third')
d <- rbind(d1, rbind(d2,d3)) %>% mutate(integration = connect*consis)
head(d, n=10)
```

```
##    retailer connect consis                    age                  marital
## 1    Hasaki       4      3 From 20 to 25 years old                   Single
## 2  Guardian       5      5 From 26 to 35 years old                   Single
## 3    Hasaki       5      5 From 26 to 35 years old                   Single
## 4  Guardian       5      5 From 26 to 35 years old                   Single
## 5   Watsons       5      5 From 26 to 35 years old Married and have children
## 6    Hasaki       2      1 From 20 to 25 years old Married and have children
## 7    Hasaki       4      3 From 26 to 35 years old Married and have children
## 8  Skinfood       4      5 From 20 to 25 years old                   Single
## 9    Hasaki       4      4 From 20 to 25 years old                   Single
## 10  Watsons       2      1 From 26 to 35 years old   Married but no children
##               spending                      employment          freq intention
## 1  Less than 2 million                        Employed Less frequent         1
## 2  More than 2 million                        Employed Very frequent         5
## 3  More than 2 million                        Employed Very frequent         5
## 4  More than 2 million                        Employed Very frequent         5
## 5  Less than 1 million                        Employed Less frequent         5
## 6  Less than 1 million Self-employment/Business owner Very frequent         3
## 7  Less than 2 million Self-employment/Business owner Less frequent         3
## 8  Less than 1 million                         Student Very frequent         5
## 9  Less than 1 million                         Student Less frequent         5
## 10 Less than 1 million                        Employed      Frequent         5
##    choice integration
## 1    most          12
## 2    most          25
## 3    most          25
## 4    most          25
## 5    most          25
## 6    most           2
## 7    most          12
## 8    most          20
## 9    most          16
## 10   most           2
```

```
##       Variable Correlation_coefficietn      p_value
## 1 Connectivity               0.4866659 1.187864e-63
## 2  Consistency               0.4804109 7.594282e-62
## 3  Integration               0.5499621 3.344388e-84
```

Consider choice order

Most choice

```
##       Variable Correlation_coefficietn      p_value
## 1 Connectivity               0.4759273 4.019441e-29
## 2  Consistency               0.4257778 4.838464e-23
## 3  Integration               0.5256669 3.107203e-36
```

Second choice

```
##       Variable Correlation_coefficietn      p_value
## 1 Connectivity               0.5213745 3.667222e-25
## 2  Consistency               0.5371847 6.918046e-27
## 3  Integration               0.5900161 2.316518e-33
```

Third choice

```
##       Variable Correlation_coefficietn      p_value
## 1 Connectivity               0.4937906 6.343375e-15
## 2  Consistency               0.5161619 2.227015e-16
## 3  Integration               0.5634673 7.847096e-20
```

Multivariate regression

```
##
## Call:
## lm(formula = intention ~ connect + consis, data = d)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.8518 -0.1892  0.1482  0.3384  2.0376
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.49001    0.11150  22.331  < 2e-16 ***
## connect      0.28216    0.02821  10.001  < 2e-16 ***
## consis       0.19020    0.02637   7.214 1.04e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7941 on 1049 degrees of freedom
## Multiple R-squared:  0.2394, Adjusted R-squared:  0.238
## F-statistic: 165.1 on 2 and 1049 DF,  p-value: < 2.2e-16

##
## Call:
## lm(formula = intention ~ connect + consis, data = d1)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.8994  0.0664  0.1006  0.4093  1.9637
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.57050    0.16996  15.124  < 2e-16 ***
## connect      0.30875    0.04272   7.227 1.92e-12 ***
## consis       0.15704    0.04117   3.815 0.000154 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8757 on 488 degrees of freedom
## Multiple R-squared:  0.2215, Adjusted R-squared:  0.2183
## F-statistic: 69.43 on 2 and 488 DF,  p-value: < 2.2e-16

##
## Call:
## lm(formula = intention ~ connect + consis, data = d2)
##
```

```
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.8106 -0.2886  0.1894  0.2333  2.2772
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.20089    0.19539  11.264  < 2e-16 ***
## connect      0.26666    0.04712   5.659 3.25e-08 ***
## consis       0.25527    0.04527   5.639 3.62e-08 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7569 on 338 degrees of freedom
## Multiple R-squared:  0.2798, Adjusted R-squared:  0.2756
## F-statistic: 65.66 on 2 and 338 DF,  p-value: < 2.2e-16

##
## Call:
## lm(formula = intention ~ connect + consis, data = d3)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.7517 -0.4086  0.1759  0.1759  1.8379
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  2.74658    0.21552  12.744  < 2e-16 ***
## connect      0.24143    0.06074   3.975 9.58e-05 ***
## consis       0.17408    0.04906   3.548 0.000475 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6346 on 217 degrees of freedom
## Multiple R-squared:  0.2529, Adjusted R-squared:  0.246
## F-statistic: 36.73 on 2 and 217 DF,  p-value: 1.824e-14

##         Subdata Connectivity_coefficient Consistency_coefficient
## 1      All data                0.2821568               0.1901968
## 2   Most choice                0.3087452               0.1570406
## 3 Second choice                0.2666614               0.2552743
## 4  Third choice                0.2414314               0.1740832
```

H2: Retail mix elements

Visualisation

```
library(likert)
```

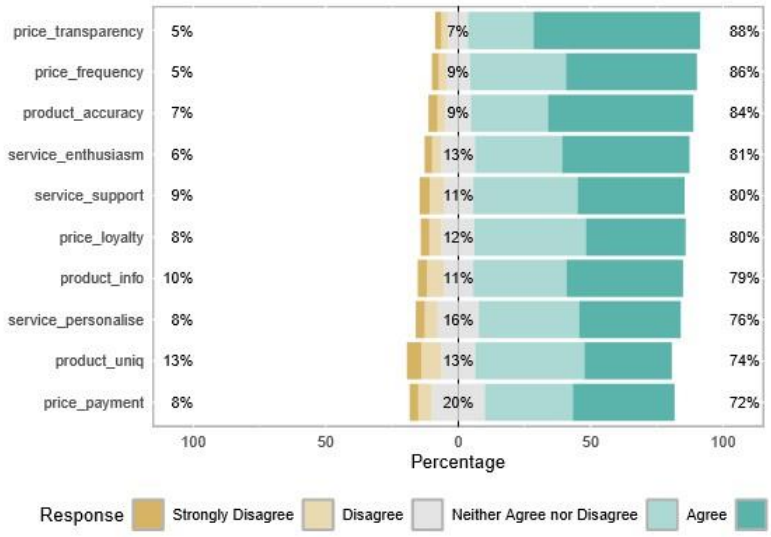
```
## Warning: package 'likert' was built under R version 4.2.3

## Loading required package: xtable
```

```
##
## Attaching package: 'likert'

## The following object is masked from 'package:dplyr':
##
##     recode
```

```
likerts <- data %>% select(starts_with('product_'),starts_with('price_'),
                           starts_with('service_'))
for (i in 1:10){
  likerts[,i] <- factor(likerts[,i], labels = c("Strongly Disagree", "Disagree", "Neither Agree nor Dis
}
results=likert(likerts[,1:10])

summary(results, centre=3) %>% arrange(desc(mean))
```

```
##                  Item  low neutral high  mean        sd
## 1   price_transparency  5.0     7.4 87.6 4.430 0.9158480
## 2     product_accuracy  6.6     9.4 84.0 4.288 0.9975200
## 3      price_frequency  5.4     9.0 85.6 4.270 0.9267241
## 4   service_enthusiasm  6.4    12.6 81.0 4.198 0.9822044
## 5         product_info  9.6    11.2 79.2 4.102 1.0477555
## 6      service_support  9.0    11.2 79.8 4.072 1.0300184
## 7        price_loyalty  8.0    12.4 79.6 4.060 0.9891192
## 8  service_personalise  8.2    15.6 76.2 4.028 1.0184746
## 9        price_payment  8.2    20.2 71.6 3.986 1.0372829
## 10        product_uniq 13.0    12.8 74.2 3.888 1.1126239
```

```
plot(results, type="bar")
```



Reliability test

Cronbach's Alpha

```
##
## Cronbach's alpha for the 'independent.vars' data-set
##
## Items: 10
## Sample units: 500
## alpha: 0.897

##
## Cronbach's alpha for the 'independent.vars[c("product_uniq", "product_info", "product_accuracy")]' d
##
## Items: 3
## Sample units: 500
## alpha: 0.793

##
## Cronbach's alpha for the 'independent.vars[c("price_frequency", "price_transparency", "price_payment
##
## Items: 4
## Sample units: 500
## alpha: 0.78
```

```
##
## Cronbach's alpha for the 'independent.vars[c("service_enthusiasm", "service_personalise", ' '    "se:
##
## Items: 3
## Sample units: 500
## alpha: 0.819
```

Regression

```
##
## Call:
## lm(formula = intention_most ~ product_uniq + product_info + product_accuracy +
##     price_frequency + price_transparency + price_payment + price_loyalty +
##     service_enthusiasm + service_personalise + service_support,
##     data = data2)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -3.8550 -0.0973  0.2285  0.4873  1.6588
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)          2.96276    0.25938  11.423  < 2e-16 ***
## product_uniq         0.10085    0.05028   2.006  0.04542 *
## product_info         0.20396    0.06273   3.251  0.00123 **
## product_accuracy    -0.03324    0.06495  -0.512  0.60904
## price_frequency     -0.04857    0.05977  -0.813  0.41688
## price_transparency   0.10443    0.06294   1.659  0.09773 .
## price_payment        0.05313    0.05321   0.999  0.31848
## price_loyalty       -0.01146    0.06232  -0.184  0.85425
## service_enthusiasm  -0.02201    0.06353  -0.346  0.72919
## service_personalise  0.14861    0.06196   2.399  0.01684 *
## service_support     -0.11728    0.05722  -2.050  0.04093 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.9342 on 480 degrees of freedom
##   (9 observations deleted due to missingness)
## Multiple R-squared:  0.1287, Adjusted R-squared:  0.1105
## F-statistic: 7.087 on 10 and 480 DF,  p-value: 1.96e-10
```

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