

**ASSESSMENT OF DIGITAL MARKETING  
ACTIVITIES, PERCEPTION, ATTITUDE, AND  
FACTORS IMPACTING PURCHASING  
DECISION OF OVER-THE-COUNTER DRUGS IN  
A MALAYSIAN POPULATION**

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**UNIVERSITI SAINS MALAYSIA**

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A MALAYSIAN POPULATION**

by

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for the degree of  
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## TABLE OF CONTENTS

|   |             |
|---|-------------|
| <b>ACKNOWLEDGEMENT</b> .....  | <b>ii</b>   |
| <b>TABLE OF CONTENTS</b> .....  | <b>iv</b>   |
| <b>LIST OF TABLES</b> .....   | <b>vii</b>  |
| <b>LIST OF FIGURES</b> .....  | <b>x</b>    |
| <b>LIST OF ABBREVIATIONS</b> .....  | <b>xiii</b> |
| <b>LIST OF APPENDICES</b> .....   | <b>xiv</b>  |
| <b>ABSTRAK</b> .....  | <b>xv</b>   |
| <b>ABSTRACT</b> .....   | <b>xvii</b> |
| <b>CHAPTER 1 INTRODUCTION</b> .....                                       | <b>1</b>    |
| 1.1 Background .....  | 1           |
| 1.2 Research Questions .....  | 13          |
| 1.3 Research Objectives .....   | 14          |
| 1.4 Organisation of The Thesis .....                                      | 14          |
| <b>CHAPTER 2 LITERATURE REVIEW</b> .....                                  | <b>16</b>   |
| 2.1 Introduction .....  | 16          |
| 2.2 Over the Counter (OTC) Drugs in the Malaysian Market .....            | 17          |
| 2.3 Pharmaceutical Marketing of OTC Products .....                        | 20          |
| 2.4 Pharmaceutical Digital Marketing (PDM) .....                          | 24          |
| 2.4.1 Overview of PDM .....   | 25          |
| 2.4.2 Types, Channels, and Tools of PDM .....                             | 29          |
| 2.5 Factors Impacting the Purchasing Decisions of OTC Drug Consumers..... | 47          |
| 2.5.1 Traditional Factors .....   | 49          |
| 2.5.2 Emerging Factors Related to E-Commerce & Digital<br>Marketing ..... | 51          |
| 2.6 Initial Conceptual Framework (ICF).....                               | 74          |

|                  |   |            |
|------------------|---|------------|
| <b>CHAPTER 3</b> | <b>RESEARCH METHODOLOGY .....</b>                                   | <b>77</b>  |
| 3.1              | Introduction .....  | 77         |
| 3.2              | Methods To Gather Themes Protocol .....                             | 81         |
| 3.3              | Malaysian Online Pharmacy Market Analysis Methodology .....         | 84         |
| 3.4              | Mixed-Methods Study Population & Subject Criteria .....             | 86         |
| 3.4.1            | Inclusion Criteria.....   | 87         |
| 3.4.2            | Exclusion Criteria.....   | 87         |
| 3.5              | Qualitative Methodology (First Phase) .....                         | 88         |
| 3.5.1            | Phenomenological Study and The Interview Guide.....                 | 88         |
| 3.5.2            | Sampling Technique and Execution of Interviews .....                | 89         |
| 3.5.3            | Data Analysis .....   | 93         |
| 3.6              | Quantitative Methodology (Second Phase).....                        | 94         |
| 3.6.1            | Survey Study and Questionnaire Design.....                          | 95         |
| 3.6.2            | Validity, Reliability, and Questionnaire Piloting.....              | 97         |
| 3.6.3            | Sample Size and Data Collection.....                                | 99         |
| 3.6.4            | Statistical Data Analysis .....                                     | 103        |
| <b>CHAPTER 4</b> | <b>RESULTS .....</b>  | <b>108</b> |
| 4.1              | Methods To Gather Themes Results .....                              | 108        |
| 4.1.1            | Charting the Data .....   | 109        |
| 4.2              | Malaysian Online Pharmacy Market Analysis Results .....             | 114        |
| 4.2.1            | Alexa Traffic Rank.....   | 116        |
| 4.2.2            | Other Website Metrics .....   | 116        |
| 4.2.3            | Social Media Presence .....   | 123        |
| 4.3              | Qualitative Results (First Phase).....                              | 125        |
| 4.3.1            | Theme One - General Perception Regarding Digital Marketing<br>..... | 127        |
| 4.3.2            | Theme Two - Attitude Towards Purchase of OTC Drugs .....            | 137        |

|   |  |            |
|---|--|------------|
| 4.3.3   | Theme Three - Factors Affecting Purchasing Decision of OTC Drugs .....   | 145        |
| 4.3.4   | Theme Four - Perception Towards Online Advertisements of OTC Drugs ..... | 151        |
| 4.4   | Revised Conceptual Framework (RCF) & The Study Hypotheses.....           | 157        |
| 4.5   | Quantitative Results (Second Phase) .....                                | 162        |
| 4.5.1   | Questionnaire Validation and Pilot Study .....                           | 162        |
| 4.5.2   | Data Collection and Reliability Analysis.....                            | 165        |
| 4.5.3   | Descriptive and Frequencies Analysis .....                               | 169        |
| 4.5.4   | Inferential Analysis .....   | 218        |
| <b>CHAPTER 5 DISCUSSION AND CONCLUSIONS .....</b> |  | <b>227</b> |
| 5.1   | Discussion of Methods to Gather Themes Results .....                     | 227        |
| 5.2   | Discussion of Malaysian Online Pharmacy Market Analysis Results .....    | 228        |
| 5.3   | Discussion of Qualitative Results (First Phase) .....                    | 234        |
| 5.4   | Discussion of Quantitative Results (Second Phase).....                   | 240        |
| 5.5   | General Conclusion .....   | 251        |
| 5.6   | Research Implications .....  | 253        |
| 5.7   | Limitations of The Research .....  | 259        |
| 5.8   | Recommendations For Future Research .....                                | 260        |
| <b>REFERENCES .....</b>                           |  | <b>263</b> |

## **APPENDICES**

### **LIST OF PUBLICATIONS**

## LIST OF TABLES

|            | <b>Page</b>   |
|------------|---|
| Table 2.1  | Commonly used OTC drug classes in Malaysia ..... 19   |
| Table 2.2  | A summary of factors affecting the purchasing decisions of OTC drug consumers ..... 73                |
| Table 3.1  | The sources of validated items used in the questionnaire ..... 96                                     |
| Table 3.2  | Verbal interpretation of Likert scale items 'cut-of values' (Pimentel, 2010)..... 104                 |
| Table 4.1  | Overview of the "methods to gather themes" data..... 110  |
| Table 4.2  | Online pharmacy websites were included in the market analysis.... 115                                 |
| Table 4.3  | Alexa Traffic Rank of online pharmacy websites on March 24, 2020..... 117                             |
| Table 4.4  | Online pharmacy websites' engagement metrics by Alexa on March 24, 2020 ..... 120                     |
| Table 4.5  | Online pharmacy websites' analysis by Site-Analyzer on March 24, 2020..... 122                        |
| Table 4.6  | Online pharmacies' presence on social media channels on March 25, 2020..... 124                       |
| Table 4.7  | Medium of interviews and the citizenship of participants in qualitative research ..... 126            |
| Table 4.8  | Demographic characteristics of participants in the qualitative research ..... 126                     |
| Table 4.9  | Participants' responses about the impact of digital marketing on their purchasing decisions ..... 133 |
| Table 4.10 | Participants' perceptions of the COVID-19 pandemic's impact on their purchasing decisions ..... 136   |

|            |   |     |
|------------|---|-----|
| Table 4.11 | Participants' responses to a question about the most effective types of digital marketing on their OTC product purchase decisions ..... | 136 |
| Table 4.12 | Factors affecting the participants' purchasing decision of OTC drugs.....   | 149 |
| Table 4.13 | Independent and dependent variables of the study .....  | 160 |
| Table 4.14 | The hypotheses proposed in the research.....  | 161 |
| Table 4.15 | Reliability test of scales after conducting the pilot study (n= 30) ...   | 164 |
| Table 4.16 | Reliability test of scales after conducting the main study (n= 408).  | 168 |
| Table 4.17 | Sociodemographic profile of the quantitative study participants ....  | 170 |
| Table 4.18 | OTC drug purchasing behaviour of the quantitative study participants .....  | 172 |
| Table 4.19 | Possibility of future online purchases and willingness to be recommended to others by respondents .....                                 | 176 |
| Table 4.20 | Interpretation of the Recommendation scale based on values of the Likert scale measurement presented in Table 3.2 .....                 | 182 |
| Table 4.21 | Interpretation of the Brand Name scale based on values of the Likert scale measurement presented in Table 3.2 .....                     | 187 |
| Table 4.22 | Interpretation of the Online Advertising scale based on values of the Likert scale measurement presented in Table 3.2 .....             | 193 |
| Table 4.23 | Interpretation of the Other Consumer's Reviews scale based on values of the Likert scale measurement presented in Table 3.2.....        | 199 |
| Table 4.24 | Interpretation of the Educational Content scale based on values of the Likert scale measurement presented in Table 3.2 .....            | 202 |
| Table 4.25 | Interpretation of the Convenience scale based on values of the Likert scale measurement presented in Table 3.2 .....                    | 205 |
| Table 4.26 | Interpretation of the Competitive Online Pricing scale based on values of the Likert scale measurement presented in Table 3.2.....      | 208 |

|            |   |     |
|------------|---|-----|
| Table 4.27 | Interpretation of the Quality of Website/Mobile Application scale based on values of the Likert scale measurement presented in Table 3.2..... | 211 |
| Table 4.28 | Interpretation of the Personal Previous Experience scale based on values of the Likert scale measurement presented in Table 3.2.....          | 214 |
| Table 4.29 | Interpretation of the Consumer's Purchasing Decision scale based on values of the Likert scale measurement presented in Table 3.2 .           | 217 |
| Table 4.30 | Results of correlation analysis between the study variables .....   | 220 |
| Table 4.31 | Multiple regression analysis (Model Summary).....   | 222 |
| Table 4.32 | The outcomes of ANOVA test (Multiple Regression).....   | 222 |
| Table 4.33 | Multiple regression analysis (Coefficients) .....   | 222 |
| Table 4.34 | Bivariate regression analysis (Model Summary).....  | 224 |
| Table 4.35 | The outcomes of ANOVA test (Bivariate Regression).....  | 224 |
| Table 4.36 | Bivariate regression analysis (Coefficients) .....  | 224 |
| Table 4.37 | Summarised results of hypotheses testing .....  | 226 |

## LIST OF FIGURES

|            | <b>Page</b>  |
|------------|--|
| Figure 1.1 | A Screenshot of the Lazada website's search results page for "Aspirin" (8 October 2019).....5                  |
| Figure 1.2 | Countries' growth in retail e-commerce sales (Lipsman, 2019) ..... 7   |
| Figure 2.1 | Pharmaceutical digital marketing categories .....30  |
| Figure 2.2 | The most popular PDM types used for promotional advertising .....39  |
| Figure 2.3 | General stages of product purchasing decisions (Kotler, 2005) ..... 68   |
| Figure 2.4 | Initial conceptual framework (ICF) of the research.....75  |
| Figure 3.1 | The 'Research Onion'; developing stages of a research methodology (adapted from Saunders et al., 2015) .....78 |
| Figure 3.2 | The research's methods outline ..... 80  |
| Figure 3.3 | A flow diagram of study selection stage for the "methods to gather themes" .....83                             |
| Figure 3.4 | Key steps of interviews implementation during the qualitative phase .....92                                    |
| Figure 3.5 | The pre-printed QR code of the online questionnaire..... 101   |
| Figure 3.6 | Summary of the two phases of data collection methods..... 107  |
| Figure 4.1 | Pie chart of 1st sub-themes percentages for 14 studies included in the "methods to gather themes" ..... 113    |
| Figure 4.2 | Alexa Traffic Rank of online pharmacy websites during MCO in Malaysia..... 118                                 |
| Figure 4.3 | The most used words by participants during the in-depth interviews ..... 128                                   |
| Figure 4.4 | Categories under the first theme ..... 128   |
| Figure 4.5 | Categories under the second theme..... 138   |

|                |  |     |
|----------------|--|-----|
| Figure 4.6     | Categories under the third theme .....   | 146 |
| Figure 4.7     | Categories under the fourth theme .....  | 152 |
| Figure 4.8     | Revised conceptual framework (RCF) of the research .....   | 158 |
| Figure 4.9     | Final research sample of the quantitative phase.....   | 166 |
| Figure 4.10(a) | Types of OTC drugs used by participants (as a percentage).....   | 174 |
| Figure 4.10(b) | Most influential digital marketing type on the purchasing decision<br>of OTC drugs according to the participants .....     | 174 |
| Figure 4.10(c) | COVID-19 pandemic impact on participants' online purchasing<br>decision of OTC drugs .....                                 | 174 |
| Figure 4.11    | The category of recommenders whose advice is usually followed<br>by study participants for the purchase of OTC drugs ..... | 178 |
| Figure 4.12    | Responses to Recommendation scale items (offline buying)<br>illustrated by a 100% stacked bar chart .....                  | 179 |
| Figure 4.13    | Responses to Recommendation scale items (online buying)<br>illustrated by a 100% stacked bar chart .....                   | 180 |
| Figure 4.14    | Percentage of answers to the “Do you usually consume the same<br>OTC brands?” question.....                                | 184 |
| Figure 4.15    | Percentage of answers to the “Why you consume the same OTC<br>brands?” question.....                                       | 184 |
| Figure 4.16    | Responses to Brand Name scale items (offline buying) illustrated<br>by a 100% stacked bar chart .....                      | 185 |
| Figure 4.17    | Responses to Brand Name scale items (online buying) illustrated<br>by a 100% stacked bar chart .....                       | 185 |
| Figure 4.18    | Degree of attention the participants would pay to an online ad of<br>pharmaceuticals.....                                  | 189 |
| Figure 4.19    | Responses to Online Advertising scale items (offline buying)<br>illustrated by a 100% stacked bar chart .....              | 190 |
| Figure 4.20    | Responses to Online Advertising scale items (online buying)<br>illustrated by a 100% stacked bar chart .....               | 191 |

|             |  |     |
|-------------|--|-----|
| Figure 4.21 | Participants' preferences for a number of attributes of online OTC drug advertising .....                    | 194 |
| Figure 4.22 | Most influential online review methods for OTC products according to the study participants.....             | 196 |
| Figure 4.23 | Responses to Other Consumer's Reviews scale items illustrated by a 100% stacked bar chart .....              | 197 |
| Figure 4.24 | Responses to Educational Content scale items illustrated by a 100% stacked bar chart .....                   | 201 |
| Figure 4.25 | Responses to Convenience scale items illustrated by a 100% stacked bar chart.....                            | 204 |
| Figure 4.26 | Responses to Competitive Online Pricing scale items illustrated by a 100% stacked bar chart .....            | 207 |
| Figure 4.27 | Responses to Quality of Website/Mobile Application scale items illustrated by a 100% stacked bar chart ..... | 210 |
| Figure 4.28 | Responses to Personal Previous Experience scale items illustrated by a 100% stacked bar chart .....          | 213 |
| Figure 4.29 | Responses to Consumer's Purchasing Decision scale items illustrated by a 100% stacked bar chart .....        | 216 |

## LIST OF ABBREVIATIONS

|          |  |
|----------|--|
| Ad(s)    | Advertisement(s)                       |
| App(s)   | Mobile Application(s)                  |
| COVID-19 | Coronavirus Disease 2019               |
| DM       | Digital Marketing                      |
| DTCA     | Direct-to-consumer Advertising         |
| FDA      | Food and Drug Administration           |
| NGOs     | Non-Governmental Organisations         |
| OTC      | Over The Counter                       |
| PhAMA    | Pharmaceutical Association of Malaysia |
| PDM      | Pharmaceutical Digital Marketing       |
| SEO      | Search Engine Optimization             |
| USA      | The United States of America           |
| WHO      | World Health Organization              |

## LIST OF APPENDICES

- |            |  |
|------------|--|
| Appendix A | Ethical approval by Human Research Ethics Committee USM (HREC)                 |
| Appendix B | The interview guide of the qualitative research                                |
| Appendix C | The invitation letter used in the qualitative research                         |
| Appendix D | The date and length of the in-depth interviews during the qualitative research |
| Appendix E | The questionnaire of the quantitative research                                 |
| Appendix F | An expert reviewer form  |
| Appendix G | Studies retrieved by "methods to gather themes"                                |
| Appendix H | Modifications made to the questionnaire after expert review                    |

**PENILAIAN AKTIVITI PEMASARAN DIGITAL, PERSEPSI, SIKAP DAN  
FAKTOR YANG MEMBERI IMPAK TERHADAP KEPUTUSAN  
PEMBELIAN UBAT TANPA PRESKRIPSI (OTC) DALAM POPULASI  
MALAYSIA**

**ABSTRAK**

Pendigitalan telah membawa kepada transformasi dan meresap dalam pelbagai aktiviti harian individu dan organisasi. Penyebaran ini mendorong syarikat farmasi untuk memanfaatkan strategi pemasaran digital untuk mempromosikan Over-The-Counter (OTC) iaitu ubat tanpa preskripsi yang mempunyai sekatan pemasaran yang lebih sedikit. Nilai ubat-ubatan ini menjadi lebih besar dengan peningkatan ubat-ubatan sendiri sebagai pilihan rawatan yang ekonomik untuk penyakit biasa yang membataskan diri. Oleh hal yang demikian, kajian ini dijalankan untuk meneroka persepsi umum dan sikap umum penduduk Malaysia mengenai penggunaan pemasaran digital dan e-dagang bagi ubat OTC. Hal ini juga bertujuan untuk menilai kesan pemasaran digital dan jenis-jenisnya terhadap keputusan pembelian OTC dan mengenal pasti faktor utama yang mempengaruhi keputusan ini. Reka bentuk kaedah campuran berurutan penerokaan digunakan adalah (qual → QUAN, kajian kualitatif diikuti oleh kajian kuantitatif terutamanya). Data kualitatif dikumpulkan melalui 13 wawancara mendalam, manakala sejumlah 408 peserta membentuk sampel akhir untuk penyelidikan kuantitatif yang menggunakan kaedah tinjauan. Analisis kandungan tematik telah digunakan dalam fasa pertama. Empat tema utama diperoleh daripada hasil analisis data kualitatif. Tujuh daripada peserta ialah perempuan dan enam daripada mereka ialah lelaki serta umur mereka adalah antara 20 hingga 45 tahun. Hasil kualitatif menunjukkan bahawa kebanyakan peserta percaya bahawa

pemasaran digital secara langsung atau tidak langsung mempengaruhi keputusan pembelian mereka sebagai pengguna OTC. Walaupun kebanyakan mereka bergantung terutamanya bagi pembelian ubat OTC secara luar talian, mereka telah menunjukkan kesediaan untuk meningkatkan penggunaan kaedah pembelian dalam talian, terutamanya selepas wabak COVID-19. Berdasarkan keputusan kuantitatif, kebanyakan responden ialah wanita (n=283; 69.5%) dan berumur antara 18-28 tahun (n=304; 74.5%). Penulis mendapati bahawa pemasaran digital mempunyai kesan buruk terhadap keputusan pembelian pengguna OTC di Malaysia (M=4.14; SD=0.812). Di samping itu, media sosial adalah jenis pemasaran digital yang mempunyai pengaruh paling besar terhadap keputusan pembelian mereka (n=235; 57.74%), dengan perbezaan statistik yang signifikan ( $p < 0.001$ ). Hasilnya juga mendedahkan bahawa cadangan, nama jenama, iklan atas talian, ulasan pengguna lain, kandungan pendidikan, kemudahan, harga dalam talian yang kompetitif dan kualiti laman sesawang atau aplikasi dengan ketara dan positif mempengaruhi keputusan pembelian mereka. Di samping itu, pengalaman peribadi produk mempunyai kesan yang signifikan terhadap keputusan pembelian semula untuk ubat OTC. Kajian ini memberikan pandangan yang berharga dari perspektif pesakit/pengguna dalam pasaran ubat-ubatan sendiri di Malaysia. Perkara ini diperlukan untuk merancang kempen pemasaran atau promosi kesihatan yang lebih berkesan, terutamanya sejak bermulanya wabak COVID-19.

**ASSESSMENT OF DIGITAL MARKETING ACTIVITIES, PERCEPTION,  
ATTITUDE, AND FACTORS IMPACTING PURCHASING DECISION OF  
OVER-THE-COUNTER DRUGS IN A MALAYSIAN POPULATION**

**ABSTRACT**

Digitalization has permeated various daily activities of individuals and organizations. This spread encouraged pharma companies to take advantage of digital marketing strategies to promote over-the-counter (OTC) drugs that have fewer marketing restrictions. The value of these drugs is becoming greater with the rise of self-medication as an economical choice of treatment for common self-limiting illnesses. Therefore, this study was conducted to explore the general perception and attitude of Malaysia's population regarding using digital marketing and e-commerce for OTC drugs. It also aimed to assess the impact of digital marketing and its types on OTC purchasing decisions and to identify the main influential factors that affect these decisions. An exploratory sequential mixed methods design was used (qual → QUAN, a qualitative study followed by a primarily quantitative study). The qualitative data was collected through 13 in-depth interviews, while a total of 408 participants made up the final sample for the quantitative research that used a survey method. Thematic content analysis was used in the first phase. Four key themes were derived from the results of qualitative data analysis. Seven of the participants were female, and six of them were male, and their ages ranged from 20 to 45. The qualitative results indicated that most participants believe that digital marketing directly or indirectly influences their purchasing decisions as OTC consumers. Although most of them rely mainly on offline purchases for OTC drugs, they have shown a willingness to increase their adoption of online purchasing methods, particularly in the aftermath of the COVID-

19 outbreak. Based on the quantitative results, most respondents were female (n=283; 69.5%) and between the ages of 18-28 (n=304; 74.5%). It was found that digital marketing has an impact on OTC consumer purchasing decisions in Malaysia (M=4.14; SD=0.812). In addition, social media is the type of digital marketing that has the most influence on their purchasing decisions (n=235; 57.74%), with a significant statistical difference ( $p < 0.001$ ). The results also revealed that recommendations, brand names, online advertisements, other consumer reviews, educational content, convenience, competitive online prices, and the quality of websites/applications significantly and positively impact their purchase decisions. Additionally, the product's personal experience has a significant impact on their re-purchase decisions for OTC drugs. This study provides valuable insights from the patients'/consumers' perspectives in the Malaysian self-medication market. This is required to plan more effective marketing or health promotion campaigns, especially with the onset of the COVID-19 pandemic.

# CHAPTER 1

## INTRODUCTION

### 1.1 Background

The rapid transformations of technology in the current decade and their interactions with daily human life practises have led to noticeable behavioural changes among individuals regarding their purchasing choices (Jose, 2017). More than 2 billion people are estimated to purchase something online in 2021 (Coppola, 2021). There is no doubt that one of the important categories of products that we should be concerned about is those related to health. For example, social media is increasingly being used as a platform for healthcare marketing (Raghupathi and Fogel, 2013). In a critical domain such as the medical field, control and regulation must be of great importance because this field is directly related to the health of a human being and hence society as a whole (Oikonomou et al., 2019). Therefore, any emerging change in the healthcare industry, such as the state of pharmaceutical digital marketing, needs to be monitored and studied periodically (Thimbleby, 2013). Pharma companies, understandably, are interested in how this concept is supported and developed in order to maximise their profits. On the other hand, independent and impartial research should be conducted in-depth to enable responsible authorities and policymakers to make data-driven decisions. This is because policymakers need to set regulations in a way that not only conceptually addresses any emerging challenge but also is practically viable and sustainable (Seiter, 2010).

The ongoing COVID-19 pandemic has accelerated business and individual digital transformation after governments implemented national lockdowns. It has acted as a catalyst for some areas, including e-commerce and e-health (OECD, 2020). For example, COVID-19 has heightened the trend toward greater adoption of social media and increased e-commerce sales (UNCTAD, 2020). The rapid spread of the pandemic has harmed almost every country's economy, leading to an inevitable decline in the resources that can be allocated to medical care. This situation magnifies the importance of self-care, including self-medication, in easing the burden on healthcare systems (Tominaga, 2021). The rational use of self-medication also provides significant benefits to consumers or patients, such as self-reliance and cost savings (Tekeba et al., 2021). Generally, people focused on staying healthy and boosting their immunity by consuming various vitamin supplements during the pandemic. People were also seen avoiding going to the doctor for common cold and flu treatments because of the risk of contracting the coronavirus (BioSpace, 2021). With all of these factors in mind, the global revenue of the over-the-counter (OTC) drug market is expected to grow (BioSpace, 2021). Moreover, a shift in people's behaviour toward the increased use of online pharmacies can be observed after the quarantine measures implemented by many countries to prevent the virus's spread (Jairoun et al., 2021). On the other hand, the increasing adoption of self-medication by populations would also increase the probability of inappropriate medication use, such as incorrect self-diagnosis and therapy selection, which can lead to serious health consequences in some instances (Tekeba et al., 2021). A number of previous studies have highlighted the urgent need to conduct public awareness campaigns about the potential threats of self-medication, particularly in developing countries (Krishnaveni et al., 2018, Rathore, 2017).

Previously, most industries entered the digital world on the grounds that it was one of their competitive advantages when modern technology and communications were a kind of luxury. But today, after the tremendous and rapid developments that have facilitated business and significantly reduced its costs, everyone is forced to include modern technologies as an essential part of their business plans, from production to marketing activities (Amankwah-Amoah et al., 2021). The deterioration of some dominant companies in the market, such as Nokia and Kodak, as they ignored these rapid technological developments, was a lesson that has benefited many companies from all industries around the world (Jia and Yin, 2015). Companies in the pharmaceutical industry, in turn, have followed the same path, particularly through their advertising and marketing departments, which are indispensable cornerstones of any pharmaceutical company (Jacob, 2018). This is due to the fact that the market is becoming increasingly competitive, and modern technologies have the potential to contribute to long-term business sustainability and sales (Mohammadzadeh et al., 2013). The majority of pharmaceutical marketing activities target influencing doctors, for example, visits by medical representatives (Hailu et al., 2021). However, direct-to-consumer advertising (DTCA) is also important for the reputation of companies in the market and the empowerment of brands, especially for OTC drugs that can be sold directly through pharmacies (Vats, 2014). The digital age, which allowed the spread of e-commerce sites and social media, opened a new door for pharmaceutical marketing by creating direct communication platforms with target groups qualitatively with interested people and potential customers rather than random marketing like previously done through television, radio, newspapers, and magazines (Bharti et al., 2020).

Today, pharmaceutical digital marketing can be seen in Malaysia (Ting, 2015). Many pharmaceutical companies have resorted to the online platform to create a new approach to increase their sales, either through their own websites or by collaborating with multi-vendor marketplace sites such as the Lazada website (Bakar et al., 2022). For example, when trying to search for the word "Aspirin" on the Lazada website on October 8, 2019, the drug was already available in the first search results under two trade names, which are Cardiprin and Casprin (Figure 1.1). Certainly, not only Aspirin, but many OTC drugs are available for purchase through such sites that have changed the face of world trade. Additionally, the e-commerce giant, Amazon, sells health-related products, including OTC medications, with a revenue of nearly \$600 million in 2018 (50% more than the previous year), as consumers are generally becoming more comfortable purchasing these products online (Francis, 2018). Logically, all these major digital changes not only affect the electronic transformation of how people buy things in general and drugs in this context, but they also affect the entire buyer's journey from the stage of awareness to the purchase decision (Malik et al., 2013). It is, therefore, crucial to examine these changes and identify the most influential factors within the market in order to have a greater understanding of the behaviours of consumers and patients, who are the core of any marketing action plan or strategy. This would empower pharmaceutical companies and e-pharmacies selling OTC products to develop an effective marketing strategy, including an appropriate marketing mix and message (Bojkovska et al., 2013). Consequently, those businesses would be able to run more effective advertising campaigns that are tailored to their target customers' needs and ways of thinking, gaining a competitive advantage, expanding their customer base, and ultimately increasing sales (Pinki, 2014).

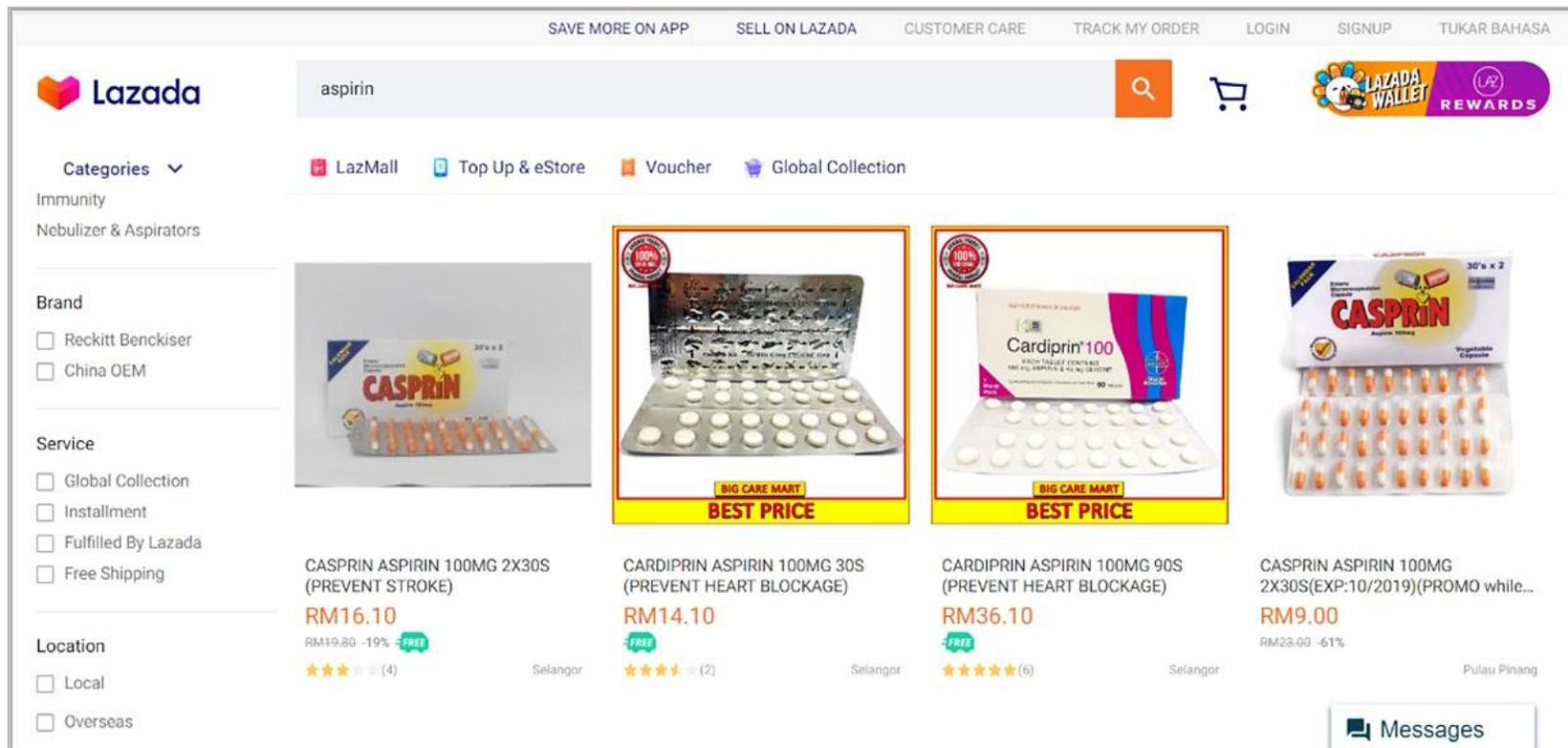


Figure 1.1 A Screenshot of the Lazada website's search results page for "Aspirin" (8 October 2019)

Furthermore, the statistics for 2019 indicate significant growth figures for e-commerce in the Asia-Pacific region, which grew at the fastest rate in the world by 25%, with India, China, and Malaysia clearly playing a role in these figures. Malaysia's e-commerce sales growth in the same year was 22.4%, outperforming the global average of 20.7% (Figure 1.2) (Lipsman, 2019). In 2020, the growth rate continued to surge at 32.7% (Mahidin, 2021). The adoption of a new normal during the COVID-19 pandemic, which boosted digital usage in Malaysia, could be the main reason for the improved performance (TheStar, 2021). The above statistics are not surprising as Malaysia is currently undergoing an accelerated transition within a supportive environment through advances in the country's financial and technical infrastructure, which are driving more and more Malaysians to adopt the concept of e-commerce. All of this is done with government support and supervision, primarily aimed at doubling Malaysia's e-commerce growth rate (export.gov, 2019). In this regard, the National eCommerce Council (NeCC) was established in 2015 with the goal of increasing the industry's contribution to GDP (Othman, 2018). Moreover, there are an estimated 20.3 million e-commerce users in Malaysia, accounting for 64.5% of the total population (Statista, 2020). This makes studying the e-commerce phenomenon in Malaysia more valuable than ever, especially in terms of pharma products that directly affect public health in the country. To gain a better understanding of the situation, one of the official statistics released by the Malaysian Communications and Multimedia Commission (MCMC) shows that medicine, groceries, and online food ordering are ranked third (with a percentage of 43.7%) in terms of shopper preference (MCMC, 2018).

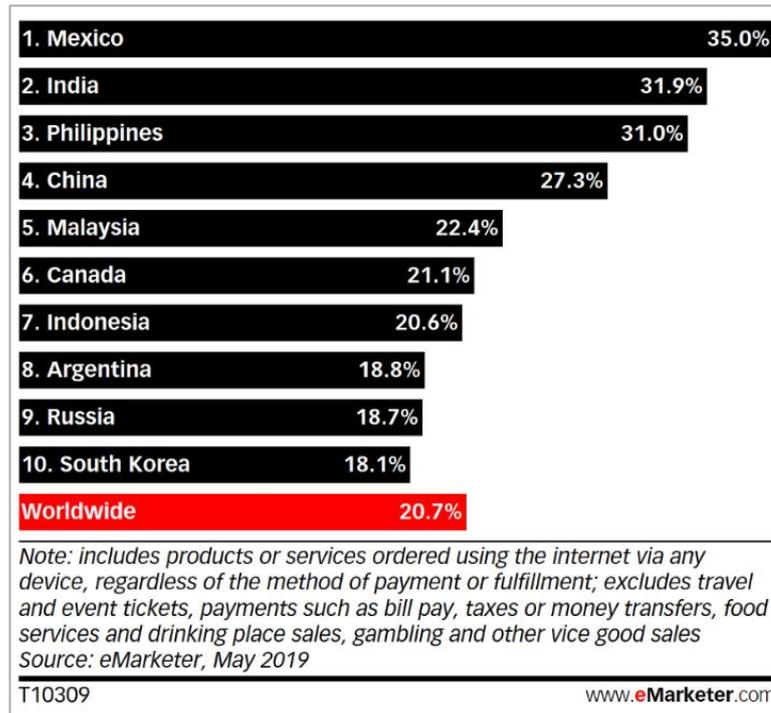


Figure 1.2 Countries' growth in retail e-commerce sales (Lipsman, 2019)

Digital marketing is not limited to e-commerce-related marketing. It includes various promotion activities, whether through websites, social media platforms, or search engine advertisements (ads). Indeed, it must be recognised that one of the important elements contributing to any change in public behaviour over time is marketing and advertising, and certainly, this also applies to the field of medical products. For instance, one study indicated that 46% of participants said that advertisements for OTC medicines had a positive effect on people, as people are well-informed regarding the medicines through such advertisements (Tiwari, 2016). The fact that there is a widespread use of the internet and social media emphasises the importance of this type of advertising for pharmaceutical companies, as it brings them opportunities to attract more customers.

Moreover, some online drug sellers exacerbate the dangers of direct-to-consumer advertising (DTCA) by encouraging people to buy unauthorised products with potentially misleading clinical information (Liang and Mackey, 2011). This represents an international public health threat that remains unaddressed, especially in emerging markets (Mackey and Liang, 2011). In addition, a significant number of these ads are usually posted by unknown parties or unauthorised entities, which raises the potential risk of these platforms and perhaps the need for greater control by the authorities and operators of these platforms. For example, the Food and Drug Administration (FDA) in the United States sent letters of warning regarding the online advertising of a dozen pharmaceutical firms because their promotions were misbranded (drugs' labelling showed false or misleading claims) and they failed to provide sufficient information about the risks in April 2009 (Kuehn, 2010). Therefore, it is important to conduct a study to understand the perceptions of OTC drug consumers about purchasing these products online. It should also seek to find out how they

interact with online pharmacies and the most important factors influencing their online purchasing decisions. This will provide valuable findings on which policymakers in the Ministry of Health can rely upon to make data-driven decisions and implement more effective and customised awareness campaigns that take into account the behaviour of this segment of consumers. This could also prompt the development and improvement of monitoring strategies for online advertising promoting OTC drugs.

Furthermore, there is an urgent need for governments and relevant health bodies to promote greater adoption of self-medication by the general public as part of efforts to minimise current healthcare challenges. The most important of which is the significant increase in the cost of health care, such as the cost of medical consultations and transportation from the consumer's perspective (Dadhich and Dixit, 2017). A recent study in the US underlined the economic value of the self-medication market, where it was estimated that OTC products save the US healthcare system around \$146 billion annually and help reduce the national debt by saving more than \$7 for every \$1 spent on OTC medicines (CHPA, 2019). Meanwhile, they are cost-effective in terms of time, especially when it is realised that without OTC products, 90% of consumers would have gone to a physician instead (CHPA, 2019). In addition, the changing lifestyles of people, due to many factors such as the nature of jobs and scientific developments in the technological field, has increased stress in their daily lives. For example, less exercise, eating more junk food, living in smaller spaces, and addiction to some products that help to stay awake in order to work longer hours. This lifestyle has led to an increased incidence of psychosomatic disorders in the form of headaches, backaches, chronic fatigue, constipation, acidity, common colds, etc. Additionally, OTC users are not limited to the adult segment, as one of the 2016 surveys conducted in the US indicated that 85% of parents prefer to use these drugs as the first line of

treatment for their children in cases of minor ailments (CHPA, 2016). This has necessitated an increase in individuals' demand for OTC medicines to alleviate these symptoms, thereby increasing the adoption of self-medication in the last few decades (Khan et al., 2013). When it comes to pain, allergies, cough, cold, and heartburn, two-thirds of consumers prefer OTC drugs to prescription drugs if they are available (Nielsen and IMS, 2013). All the aforementioned facts are contributing to an increase in the use of OTC products and the value of the self-medication market, in addition to the ease of access and reasonable cost of these products. This calls for further research and plans to include new long and short-term marketing strategies that take into account changes in demand and technological innovations used by all stakeholders. Indeed, conducting market research to understand the characteristics and factors influencing consumer purchase behaviour in the OTC drug market is one of the key cornerstones of any solid marketing strategy. Healthcare policymakers, on the other hand, should put more effort into designing public health awareness campaigns with the objective of promoting responsible self-medication practises. Digital technologies have great potential to be used in these health educational campaigns. Individuals can feel more confident about self-managing minor ailments by using web portals and mobile applications (apps) that provide clear and accurate information and are managed by trusted governmental or non-governmental organisations (NGOs) (Eijck et al., 2020).

Unfortunately, although the market of OTC drugs is highly competitive, most pharmaceutical marketing studies have focused on prescription drugs (DeLorme et al., 2010). Furthermore, there has not been any conducted research to investigate the potential impact of the increasing use of digital marketing and e-commerce platforms on purchasing decisions for OTC drugs in many developing countries, such as

Malaysia, so far. Due to this reason, there is an urgent need to conduct such studies since the obtained results would not be only beneficial to the government agencies such as the Ministry of Health, but also to pharmaceutical companies in order to develop their marketing strategies in a more patient-oriented manner.

In short, the significance of the current research project and its implications can be justified and discussed from two main perspectives, namely business economics and public health and safety. The first aspect is relevant to pharmaceutical companies and online pharmacy operators, as the current study's findings can provide them with a better understanding of OTC consumers, their perceptions of digital platforms, and the factors that influence their purchasing decisions. Pharma companies should be able to reach a larger segment of their target audience and influence their purchasing decisions by better understanding their purchasing behaviour. Updating their customer personas would help these businesses improve their marketing strategies, allowing them to take advantage of new business opportunities and gain a competitive advantage in the Malaysian OTC market. A well-designed and integrated marketing strategy should also effectively contribute to delivering a superior consumer experience that boosts satisfaction and loyalty over time. Some of the satisfied consumers may become brand advocates who promote an OTC brand to their friends, family, and followers of their own free will. All of the above will eventually lead to increased profits and business growth for pharma companies. The second aspect should arouse the interest of healthcare policymakers and organisations concerned with public health in Malaysia, whether they are governmental organisations or NGOs. The findings of our study can assist these organisations in better designing and implementing health awareness campaigns and digitised health promotion strategies that are data-driven and can successfully reach the target audience. These campaigns

should primarily target OTC drug users, as they are the group most likely to adopt the self-medication idea and show adherence to it, in order to raise their level of health knowledge and awareness toward more rational and responsible medication use. The value of these health awareness campaigns has increased in light of initial indications that there has been an increase in self-medication practises since the onset of the COVID-19 pandemic. This will maximise the economic benefit of self-medication to support the healthcare system while minimising any potential health risks and consequences for consumers. Additionally, the current study findings are supposed to support government health authorities in determining where they should focus their control and monitoring efforts, as well as in modifying policies based on the most recent data to effectively regulate OTC medicine digital advertising and sales. Seeing the whole picture, consumers in the Malaysian OTC drug market will get a double benefit from both of the aforementioned aspects. For example, marketing strategies based on consumer data, such as their behaviours, attitudes, and preferences, are expected to better meet their needs and improve customer experience and satisfaction. Improved health promotion campaigns, on the other hand, will grant patients/consumers some of the decision-making power regarding their own health by equipping them with the knowledge they need to make more judicious, informed, and safe health decisions.

Finally, as this research attempts to study different elements and is not confined to only one specific field, where it combines the research scopes of pharmaceutical sciences with marketing, it can be classified as interdisciplinary (or multidisciplinary) research (IDR). Certainly, the significance of this type of research is mostly attributed to its unique ability to make key contributions across multiple disciplines (Gill et al., 2015). Consequently, in recent years, IDR has become one of the major areas of

emphasis in academia as a purposeful trend that makes researchers step beyond traditional disciplinary boundaries (Keestra and Menken, 2016). Additionally, Hoidn (2018) suggested that researchers in higher education should be required to engage in conducting more IDR with the aim of generating knowledge with fewer limitations.

## **1.2 Research Questions**

With the purpose of achieving this study's objectives which sought to provide more understanding of consumers' behaviour when interacting with digital marketing in the Malaysian pharmaceutical market, the following questions were developed:

**RQ1.** What are the main characteristics of the Malaysian online pharmacy market as an e-commerce platform for OTC drug dispensing?

**RQ2.** What is the general perception and attitude of Malaysia's population regarding using digital marketing techniques for OTC products?

**RQ3.** Does digital marketing have a considerable impact on the purchasing decisions of OTC drug consumers in Malaysia?

**RQ4.** Which digital marketing type has the most influence on the purchasing decisions of OTC drug consumers in Malaysia?

**RQ5.** What are the major factors influencing online consumers' purchasing decisions for OTC drugs in Malaysia when they interact with online pharmacies or e-commerce marketplace platforms?

**RQ6.** What are the major factors influencing offline and repeat consumers' purchasing decisions for OTC drugs in Malaysia?

### **1.3 Research Objectives**

**RO1.** To explore the general perception and attitude of Malaysia's population regarding using digital marketing techniques and e-commerce for OTC drugs.

**RO2.** To assess the impact of digital marketing and its types on the purchasing decisions of OTC drug consumers among Malaysia's population.

**RO3.** To identify the main influential factors that affect purchasing decisions for OTC drugs among Malaysia's population.

### **1.4 Organisation of The Thesis**

In order to facilitate understanding of the current research project for the reader, this thesis was divided into five chapters. The first and introductory chapter intends to draw a clear picture of the research topic background. Then, it provided an explanation regarding the problem statement, the research objectives and questions, and the significance of the study. The 2<sup>nd</sup> chapter presents a detailed review of the literature, including the concept of pharmaceutical digital marketing (PDM) and the most important factors that can affect the purchase decisions of OTC drug consumers. Chapter 3 discusses the research methodology in a comprehensive manner. It also covers a justification of the choice of methods used, data collection strategy, sampling process, research instruments, validity and reliability, and ethics.

The fourth chapter contains the results in detailed four sub-chapters. These sub-chapters are the results of the methods to gather themes, the results of the Malaysian online pharmacy market analysis, the results of the qualitative phase, and the results of the quantitative phase. In the 5<sup>th</sup> and final chapter of the thesis, the main findings of the research were interpreted and discussed accordingly. It also highlighted an overall conclusion, theoretical and managerial implications, limitations, and possible future research avenues.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

Indeed, in recent years, many hypotheses in previous studies have been developed in order to explain the relationship between digital marketing which is increasingly being used by consumers and the factors influencing their purchasing decision. For example, one study conducted in Sri Lanka investigated the impact of digital marketing on consumer purchase behaviour by examining a number of variables, including cost-effectiveness, information satisfaction, consumer trust, and internet shopping experience (Nizar and Janathanan, 2018). Although previous research has added a lot of theoretical data over time, unfortunately, there have been only a few studies that address the impact of digital marketing on the purchase decisions of OTC drug consumers globally. No published research covering this research topic has been found within the Malaysian context. Consequently, this research has attempted to bridge this knowledge gap by exploring the relationship between digital marketing and purchase decisions of OTC drugs and the extent to which Malaysian society was influenced by this relationship. As a result, this can add significant value for future researchers. In addition, it is undeniable that previous studies on this topic should be taken into consideration as this would have enabled us to choose the most influential independent variables and then design questionnaires

and develop appropriate hypotheses in line with the proposed conceptual framework. Thus, related information from the existing literature was covered in this chapter.

## **2.2 Over the Counter (OTC) Drugs in the Malaysian Market**

In Malaysia, pharmaceutical products are required to be registered with the Drug Control Authority (DCA) under the following categories: (1) products that contain scheduled poisons; (2) products that do not contain scheduled poisons (OTC drugs); (3) traditional medicines; (4) veterinary products; and (5) cosmetics (Ministry of Health Malaysia, 2011). According to the Pharmaceutical Association of Malaysia (PhAMA), OTC pharmaceutical products are defined as "any medicinal product which is used in self-medication to treat ailments, not requiring a doctor's prescription." The same association pointed out the important role of self-medication in Malaysia, when used properly, through the use of non-prescription products that relieve symptoms and treat diseases and injuries without intensive medical supervision (PhAMA, 2013). In 2021, the Malaysian OTC drug market generated around 500 million U.S. dollars in revenue (Statista Research Department, 2021). Moreover, one Malaysian study found that OTC drug usage was nearly 75%, according to a survey conducted in the Klang Valley, Malaysia on a sample of 400 people (Chua and Sabki, 2011). In the following year, another survey administered to 1000 respondents in 5 different states of Malaysia indicated that 69% of them reported purchasing non-prescription medicines (Mathialagan and Kaur, 2012). Also, in a sample of 364 people from Malaysia's urban population, 83.9% said they consumed OTC drugs (Azhar et al., 2013). These studies can give an indication that self-medication and the use of OTC medicines are evident in Malaysia. There appears to be a significant segment of Malaysian consumers who

rely on buying OTC medicines without consulting a healthcare provider for a variety of indications, including pain, sore throat, and cough.

A few previous studies examined what are the most commonly used classes of OTC drugs by consumers in Malaysia based on the therapeutical effects of these drugs. For example, Mathialagan and Kaur (2012) indicated that the most commonly used classes of OTC products are painkillers\* (14.8%), followed by vitamins & minerals (11%), cough remedies (11%), and sore throat (9.6%). Likewise, the same results were found for the two most common classes used by Azhar et al. (2013), which are supplements (41%) and painkillers (27%). Sore throat products and flu/cough remedies also got the same percentage (Table 2.1).

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\* Only products that are under OTC classification such as those containing Paracetamol, Aspirin, etc.

Table 2.1 Commonly used OTC drug classes in Malaysia

| <b>n.</b>  | <b>OTC Therapeutic Class</b> | <b>Frequency (%)</b> |
|--|------------------------------|----------------------|
| Results adapted from Mathialagan and Kaur (2012) |                              |                      |
| 1  | Painkillers*                 | 14.8                 |
| 2  | Vitamins or Minerals         | 11                   |
| 3  | Cough remedies               | 11                   |
| 4  | Sore throat                  | 9.6                  |
| 5  | Medicated eye care products  | 7.6                  |
| 6  | Hay fever products           | 7.2                  |
| 7  | Medicated skin care products | 6.1                  |
| 8  | Indigestion or heartburn     | 5.4                  |
| Results adapted from Azhar et al., (2013)        |                              |                      |
| 1  | Supplements / Vitamins       | 41                   |
| 2  | Painkillers*                 | 27                   |
| 3  | Flu / Cough remedies         | 27                   |
| 4  | Sore throat products         | 27                   |
| 5  | Medicated skin care          | 23                   |
| 6  | Medicated eye care           | 15                   |
| 7  | Herbal medicines             | 14                   |
| 8  | Medicated foot care          | 13                   |

\* Only products that are under OTC classification such as those containing Paracetamol, Aspirin, etc.

### **2.3 Pharmaceutical Marketing of OTC Products**

The first signs of pharmaceutical marketing activities were at the beginning of the 19<sup>th</sup> century when "Nostrum-mongers," who were dealers or suppliers of quack remedies or patent medicines, introduced medical advertising in an unregulated manner, such as print advertising and brand names (Applbaum, 2006). After spending huge sums on health-beneficial products and under stringent manufacturing control, pharmaceutical companies have to spend more to distribute these products in the market and increase their market share, which is why pharmaceutical marketing has been created (Johar, 2013). In the meantime, due to the growing importance of the "business" of health, globalisation, changing patient-provider relationships, and emerging health-related technologies, pharmaceutical marketing has experienced rapid growth (Mackey and Liang, 2012). There is a noticeable difference between marketing in the pharmaceutical sector and other industries because of the special condition of pharmaceutical products compared to other commercial products. However, from the theoretical perspective, pharmaceutical marketing shares the same principles as marketing science and can be considered to fall under its subsets (Anderson and Coughlan, 1987). Basically, pharmaceutical marketing is usually divided into two main categories: direct-to-consumer advertising (DTCA) and direct-to-physician advertising (DTPA). The type of pharmaceutical product has a real impact on the choice of marketing strategy. Although, in general, pharmaceutical firms are more likely to target doctors with their advertising campaigns for most of their products, the situation would be different when the marketed products are OTC drugs, where consumers can choose self-medication and buy their drugs by themselves. In

this case, pharmaceutical firms usually focus more on targeting public consumers (Ing-udomnoogoon, 2018).

Although direct-to-consumer advertising (DTCA) is considered the reason for making drug prices higher and other negative arguments towards it, many proven benefits may outweigh its negative effects, including 1) It raises awareness and reduces the stigma associated with conditions such as depression, thereby encouraging treatment. 2) It helps with medication regimens' commitment. 3) It makes consumers more concerned about their diagnoses and potential treatments. 4) It also helps in improving customer-physician relationships; hence customers are becoming increasingly knowledgeable. 5) It gives patients more autonomy by allowing them to weigh the benefits and risks of their treatment options (Johar, 2013). Because consumers are now more educated due to the ease of accessing health information, physicians can no longer treat their patients as passive participants; instead, they need to participate more in their health decision-making process. This reflects the significance of direct communication between pharmaceutical companies and consumers (Manchanda et al., 2005). The OTC product market, in particular, has some unique characteristics in terms of profit margins, distribution, and advertising (More and Srivastava, 2010). PhAMA also confirmed that the advertisements for these medical products have a significant role in supporting the positive contribution of self-medication in the Malaysian health care system, as they empower Malaysian consumers towards making wiser decisions when they self-medicate. The association has added in its version of the "Code of Conduct for Non Prescription (OTC) Products" that the pharmaceutical industry should take the responsibility of manufacturing and marketing OTC products that are truthfully labelled and advertised to increase consumer awareness (PhAMA, 2013). Contrary to the prescription drug market, sales

in the OTC product market can be driven by traditional marketing techniques such as advertising campaigns (Huber et al., 2012). However, marketers of OTC drugs should not consider physicians as their main target segment. Although physicians are knowledgeable about this category of products, they are less empowered to give recommendations on them. Therefore, consumers are the primary target of OTC marketers because they have the necessary power to make decisions (Rollins and Perri, 2014).

The consumers of OTC drugs can be divided into two main segments, namely, users and non-users of the products. This means that there are two contexts: before and after purchase (DeLorme et al., 2010). Users before purchase are also divided into two targeted categories: advertisements targeting non-users of certain OTC drugs and the second one targeting users of other OTC brands that hold the same active pharmaceutical ingredient (API). Reminding and reinforcing users' behaviour is the goal of OTC drug advertisements that target after-purchase users to encourage continued use, build brand loyalty, and prevent brand switching (Sheth, 1974). In both purchase contexts, the influence of the OTC products' advertisements can be seen in two different ways: either directly or indirectly (Lowe and Ryan-Wenger, 1999). Direct influence is a process consisting of only one step that directly influences the behaviour of users or non-users, whereas indirect influence is a two-step process that involves an agent and involves indirect advertisements influencing an interpersonal moderator (doctors or pharmacists), who then influences the behaviour of consumers (DeLorme et al., 2010).

Despite the fact that many people recognise the importance of OTC marketing, it is still a neglected area in academia since most studies have focused on prescription drugs. In addition, there are positive expectations of the OTC drug market because

several reasons (DeLorme et al., 2010). For example, the growth of self-medication as an economic solution for health systems makes OTC products a convenient and inexpensive way to treat some health issues. In addition, more OTC products are available in the market due to Rx-to-OTC switching activities, which means a prescription drug is reclassified to be made available without a prescription. For instance, in the Japanese market, the antipyretic analgesic Loxonin S and Alesion, treatments for allergic rhinitis, were both approved as OTC drugs in 2010. Retail sales of the products reached ¥7.0 billion and ¥2.4 billion in 2017, up from ¥3.4 billion and ¥200 million in 2011, respectively (Sakai, 2019). Another reason is that insurance companies encourage the use of OTC products as a cost-cutting alternative to prescription drugs. Also, health literacy is expected to rise as the internet becomes more widely used as a source of health and self-medication information (DeLorme et al., 2010). From the perspective of consumers, OTC products are a very cost-effective choice for them. For example, in the USA, Kittinger and Herrick (2005) estimated that, on average, the price of an OTC drug is USD \$7, while the average price of a prescription drug is between USD \$28 and \$96. Furthermore, Smith (1983) described the most significant objectives of OTC drug advertising from the perspective of pharmaceutical companies as one of the major drivers in this field. Firstly, OTC drug ads are one approach to promoting self-medication. They are also increasing public awareness about health conditions and symptoms. These ads are the best way to share the advantages of OTC products. Lastly, OTC ads have the potential to persuade customers to buy OTC products by positioning them as the best option for treating minor ailments (Smith, 1983).

The immense benefits of OTC drugs for companies in the pharmaceutical industry, as well as the critical role that marketing plays in obtaining and enhancing

these benefits, cannot be overlooked (Khazal, 2015). This is true not only in developed markets but also in emerging markets, which have seen the fastest growth rates in recent years (Mordor Intelligence, 2020). Moreover, in today's world, consumers are actively searching for health information on the internet (Memisoglu, 2018). Pharmaceutical companies, in turn, should keep track of what consumers are doing and build a presence on the same platforms where their consumers are already at the right time, as well as adopt a more flexible organisational structure. The flexibility would enable pharmaceutical companies to keep up with cutting-edge marketing tools and technological advancements. Thus, they stand a better chance of long-term survival, as well as gaining a competitive advantage from increased productivity and efficiency (Autry et al., 2013). Furthermore, digital technologies are becoming more widely used in pharmaceutical marketing management, and they have begun to alter some aspects of the traditional environment of OTC drug marketing approaches (Roblek, 2015).

#### **2.4 Pharmaceutical Digital Marketing (PDM)**

Technological advancements have influenced how people communicate, allowing distances to be bridged and giving rise to the concept of globalisation. Technological tools are becoming increasingly popular in communities, to the point where they are influencing many aspects of daily life, including business. Since communication is at the heart of marketing, it is not surprising that it is one of the areas most affected by new forms of communication while attempting to utilise and optimise them through the development of new tools and strategies. Although the pharmaceutical market is considered an atypical market, pharmaceutical marketing is