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Literature Review

Title
Smart Digital Content Marketing for E-commerce using Sentiment and Text Analytical Approach: A literature Review

Author: **BABAK RAHIMI**
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Abstract

The use of customer reviews in creation of effective digital content marketing has been receiving a great attention by practitioners in the context of E-commerce. Nevertheless, there are limited research conducted on extracting influential and important information from online reviews provided by customers on the purchased goods and services using systematic mechanism and create effective contents for the purpose of digital marketing. Through a systematic review of Informatics, Information System and to some extend Marketing and Business literature, this study will cover the relationship of effective digital content marketing and E-commerce business performance and aims to propose a systematic mechanism to extract important information from online reviews through sentiment and text analysis. The literature review will also intend to propose a framework for Web-based content creation facility for E-commerce players. The literature review then outlines the future possible research areas as well as limitations of the study.

Keywords: E-commerce; Digital Content Marketing; Sentiment Analysis; Text Analysis; Customer Review

1. Introduction

The developments in Information Communication Technology (ICT) and Internet have created new paradigm shift in the way businesses and in particular the E-commerce applications operate in the current comparative environment. According to Anderson Consulting (1999), E-commerce can be defined as "the conduct of business among e-enterprises and consumers" (cited in Cox and Dale, 2001, p. 121). Being a digital platform-based business, E-commerce became a phenomenon leading the way by creating novel, unique and none ever existed online services. Tan et al (2007) argues that E-commerce is not only a cost-effective business model to reach the global customers, but a strategic way to gain prominent market share.

E-commerce platform enables various types of business transactions such as Business to Business (B2B), Business to Customer (B2C) and Customer to Customer (C2C) (Chaffey et al. 2019). Generally, businesses are more interested in B2C E-commerce transaction as a results of high turnover. The evidence to this preference is the revenue of USD 2,356 billion reported worldwide and USD 1,380 million reported in Malaysia for the year 2018 and is expected to grow rapidly (Statista, 2018). Subsequently, E-commerce shows an exponential growth due to large volume of online consumer opportunities resulting in revenue generation for businesses.

E-commerce platforms are considered as major contributors to the digital economic growth of a country. Malaysia, being a Southeast Asian country with a divers culture, displays a strong economic growth at a rate of 4.3% in 2019 and expected to achieve 7.8 by 2021 with the support of E-commerce development (International Monetary Fund, 2020). The expected high economic growth is further supported with the increase in the number of active internet users in Malaysia (79% of the total population of Malaysian) (Jumaan et al, 2020). The large number of active online population drive the e-commerce businesses to perform in a more dynamic manner, thus demand for further enhance their marketing activities.

Additionally, it has become evident to the E-commerce ventures that the online costumer reviews linked to the purchase experiences play an important role in future development of their business. Therefore, it is conspicuous that costumers prefer to write online reviews using the contextual languages other than English language, thus not many are willing to write too. In the context of Malaysia, majority of people prefer to use Malaysian Language (Bahasa Malaysia) in comparison due to the lack of English fluency and of course the comfort (Brennan et al, 2016). Lack of providing costumer review or in some cases writing insufficient review may result from the fact that English language is not the preferred medium.

The landscape of E-commerce is continuously evolving with the dynamics of costumer buying behavior and rivals among the players in the industry. According to Weathers (2015), the proliferation of customer reviews has gone through a lot of changes in the recent years, which are considered as effective electronic word of mouth (eWOM) and are recognized as an active marketing tool to increase sales of online products and services (Chevalier and Mayzlin, 2006). Darke et al (2016) argue that current online customers are living in an era of distrust and need relevant recommendations to make better purchase decisions. Shen et al (2015) report that 70% of customers reach to their final purchase decision upon consulting the relevant product review where, 79% of buyers trust the reviews as much as personal recommendation, and 80% of customers actually change their purchase decisions after reviewing negative comments about a particular product or service. The online customer reviews can act as a strong social proof, build trust and persuade the prospective customers to make purchase decision more confidently if such reviews are strategically handled.

1.1. Problem Statement and Research Gap

As stated earlier, E-commerce platforms customer reviews play an important role in making appropriate purchase decisions. However, there are not much of research conducted in line with exploring the suitable structure and assessing the impact on online reviews with the aim of further business development (Banerjee et al, 2017). Although the importance of online reviews is evident, there are noticeable raw and unstructured characteristics in this regards, and comprehensive analysis on the online customer reviews needed as such reviews are significantly essential and powerful marketing tools.

In the new era, the conventional digital marketing activities and materials are not the only sources customers are relying on for their purchase decision, but they direct themselves towards other reliable sources of information such as available and published online reviews. As a results, reviews are considered to be more structured, informative, persuasive and trustworthy information within the online platform (Ba and Pavlou, 2002; Willemsen et al, 2011). Nevertheless, not always the large number of reviews means adequate positive results with regards to the decision making process in E-commerce business (Maslowska et al, 2017) and therefore, extracting factual content from the existing online reviews considered to be a necessary process for an effective analysis.

The online customer reviews need further consideration within the domain of E-commerce platforms, including opinioned and factual aspects, which in return this distilling factual contents from reviews can support the E-commerce business to enhance marketing and business performance. Although there are relevant proposals in this regards, but no implementable and user-friendly systems are recommended for practitioners (Singh et al, 2017). While advanced techniques are employed for sentiment analysis, there are still problems associated with dealing with other languages as majority of algorithms are designed for English language (Vinodhini and Chandrasekaran, 2012). Because of multilingual nature of online reviews, analysis purely based on English language can cause the risk of not capturing the complete opinion and sentiment of customers, especially in the context of Malaysia (Lo et al, 2017). Hence, contextual language-based sentiment analysis can be a useful method for the benefit of e-commerce platforms in Malaysia.

Moreover, although the content marketing is receiving high attention in today's digital era, producing quality content with the aim to attracts customers remain a challenge for business in the competitive market (Humphreys and Wang, 2018). Crating effective marketing content is as important and critical for E-commerce platforms for enhanced marketing activities. Hollebeek and Macky (2019) argue that digital marketing content act as a relationship marketing tool with the aim of not only identifying buyers, but ensuring customer satisfaction. Even though, digital content marketers in E-commerce platforms continuously create and utilize different and effective contents, practitioners raise the concern regarding the level of integration between text analytics and the content management system (Halper et al, 2013).

1.2. Significance of the Study

The study would mutually benefit both customer and E-commerce platform sellers in number of ways. The benefits for sellers can include building reliability leading to close customer relationship and loyalty, proposed sentiment analysis (in other words opinion mining) leading to effectively address and attend to negative reviews, enhanced operation optimization within the online stores, and enabling marketers to create effective digital marketing contents. Improving online pre-purchase evaluation, building trust with potential customers (through eWOM) and customer satisfaction through gaining value for money are some of the benefits to customers.

1.3. Aims and Objectives of the Study

As stated, online reviews are important platforms to understand customers' expectations, and currently many E-commerce businesses gather information from online reviews using sentiment analysis. On the other hand, identification and generation of important and influential keywords can be achieved through the use of text analytics. Thus, linguistics and semantic analysis has gained an exponential attention in recent years specially where dealing with languages other than English. At the same time, with increasing demand for effective digital content marketing, E-commerce platforms can gain benefit from text analytics to create relevant digital contents using the data extracted. This process will be supported by suitable machine learning algorithm Artificial Intelligence integration. This eventually contributes to the knowledge gap and the outcome will precisely help E-commerce business to perform better and offer enhanced customer experience. Hence, below aims are outlined in this study;

1. To explore online customer reviews with the help of sentiment analysis and propose a blue print for effective decision making;
2. To propose modeling mechanism using semantic analysis with the aim to classify reviews;
3. To design a web-based content creation using text analytics;
4. To assess the web-based content creation in an online review environment.

The literature review focusses on E-commerce platforms and analyzes the impact of effective content marketing. The study will also examine the influence of Sentiment and Semantics analysis with the help of Text Analytics on extracting influential and important information from Customers' Online Reviews. Eventually the possibility of creating enhanced Digital Content Marketing for E-commerce platforms is explored. To this end systematic literature review is conducted by examining relevant research papers. After analyzing the finding of literature reviews future possible research as well as study limitations is outlined.

2. Methods

This literature review is conducted to synthesize the previous body of knowledge with the aim to address the research gap (Rowe, 2014) around the author's topic of interest being "Smart Digital Content Marketing for E-commerce using Sentiment and Text Analytical Approach". Hence, a systematic literature review is done to uncover related studies and research completed on the above mentioned specific topic (Boell and Cezec Kecmanovic, 2011).

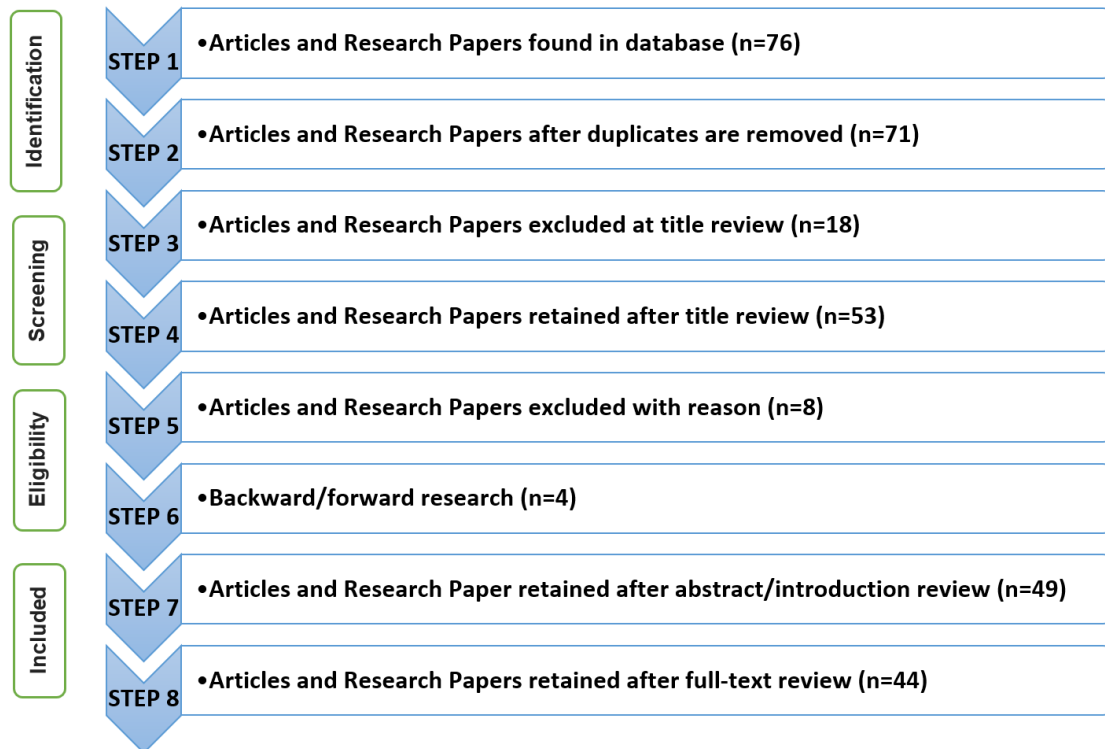## 2.1. Inclusion and Exclusion of Literature

The study and the review of the relevant articles conducted to (1) explore the importance of online customer reviews in E-commerce platforms, (2) use a particular mechanism with the help of sentiment and text analysis to extract influential keywords from product/customer reviews, (3) use Linguistics and Semantic data/information to create effective digital marketing contents (4) explore effectiveness of created marketing contents on E-commerce platforms performance.

To start the literature review articles related to Information Systems (IS) and past research papers linked to the topic of the study are looked at. As the scope of the topic chosen is extended to digital marketing and E-commerce/e-business, journals such as Business Research and Interactive Marketing were also part of the journal resources. Nevertheless, as the topic of the study is significantly related to informatics and information system, majority of papers and articles extracted and selected were in the filled of informatics, information system (IS) and information communication technology (ICT). Due to the nature of the study being systematic review most of the sources are selected from journal articles and publication ranging from year 2001 to 2020, but majority of the articles, especially those related to the main body of the study, selected from the studies conducted in the recent decade to ensure the reliability and credibility of the research gap and the problem statement. For the conference papers, 3 studies were referred to, which conducted in 2002, 2011 and 2015.

In order to search and select relevant articles "ACM Digital Library", "IEEE Xplore" and "Web of Science" under Informatics Database using The Linnaeus University online library are referred to. The general idea was reading through the mainly "Abstract" and in some cases "Introduction" as well as screening the "Title" and "Topic" of the journal articles. However, in some cases and due to the fact that the topic of the study was specific and detailed, keywords such as "Digital Content Marketing" for "E-commerce", "Sentiment Analysis", "Text Analytics", and "Customer/Product Review in E-commerce Platforms" are used when searching through the databases. Appendix, Table 1 illustrates an example of table used while reviewing the articles to identify the themes and the relevancy of content with the literature review topic.

The selection process of journal articles, conference papers and very limited books was based on the above mentioned keywords as well as reading through the abstract and introduction of write-ups to find the relevancy to the topic of the literature review. However, in some cases and do the fact that inter-relation of some concepts and relevancy of the methodologies such as Sentiment/Semantics Analysis or Text Analytics and their usefulness in extracting influential customer and products reviews was subjective, the author was required to read the full text of some articles and eliminate or add through backward/forward research. Figure 1 illustrates the process of search and selection of articles adopted from Shea and Belden (2015).

Out of 76 initial search result found, eventually 37 Journal Articles, 3 Conference Papers and 4 Academic Books are included in this study (See Figure 1 for the process of Inclusion and Exclusion of Literature). Although bulk of articles used are from Informatics and IS/ICT Journals, due to the diversity of the literature review title, previous research papers from Business and Marketing Journals are extracted (Journals: DSS, IM, IJIM, MISQ, JCMC, IJEC, JCIS, AIR, IPM, IEEEA, IS, JCR, CCIJ, IJA, JM, IJ, SB, JIM, PM; Conferences: PIC).

Identification		
	STEP 1	•Articles and Research Papers found in database (n=76)
	STEP 2	•Articles and Research Papers after duplicates are removed (n=71)

Screening		
	STEP 3	•Articles and Research Papers excluded at title review (n=18)
	STEP 4	•Articles and Research Papers retained after title review (n=53)

Eligibility		
	STEP 5	•Articles and Research Papers excluded with reason (n=8)
	STEP 6	•Backward/forward research (n=4)

Included		
	STEP 7	•Articles and Research Paper retained after abstract/introduction review (n=49)
	STEP 8	•Articles and Research Papers retained after full-text review (n=44)

Figure 2.1: The Process of Inclusion and Exclusion of Literature
Adapted from Shea and Belden (2015)

2.2. Analysis and Synthesis

After examining the quality of already existing literature and assessing the validity and relevancy of previous research conducted with regards to the literature review topic, analysis and synthesis of findings are presented by summarizing theories (Aromataris and Pearson, 2014) on importance of digital content marketing for E-commerce and contribution of semantic and text analysis in understanding customer reviews. The aim was to extract influential and important data/information on customer and product reviews and propose a mechanism to use the data for enhanced content creation in digital content marketing activities. In this regards, synthesizing the literatures' content was executed with consideration of (A) if customer reviews are important for quality improvement in E-commerce platforms, (B) to what extend online reviews affect customers' purchase decision making process when it comes to E-commerce products and services; (C) whether or not sentiment and text analysis can assist extracting important and influential information from customers' online reviews; (D) how the information extracted from online reviews can assist in creating effective content creation for digital content marketing activities with the aim to improve overall performance in the context of E-commerce platforms.

The literature reviews then divided in separate sections including E-commerce, Customer Review, Sentiment and Text Analysis as well as Digital Content Marketing. After giving a brief introduction and definition, benefits and contribution of concepts and methodologies examined in relation to the topic of the study. Hence, different views and proposed methods by different authors and practitioners could be discussed and explored. A summary of arguments, proposed concepts and school of thoughts are illustrated in the Table 1.1;

E-commerce	• Current online customers are living in an era of distrust and need relevant recommendations to make better purchase decisions (Darke et al, 2016) • Limited research conducted in line with exploring suitable structure and assessing the impact of online reviews in E-commerce (Banerjee et al, 2017) • Not necessarily large number of reviews leads to adequate decision making in E-commerce businesses (Maslowska et al, 2017) • Key factor contributing towards the E-commerce success is quality improvement through continuous evaluation of customer review (Tan et al, 2007) • Benefit of customer review for E-commerce includes building customer trust, cultivating Web site's credibility, improving the ranking of the search engine, leveling up the rate of conversation as well as social proofing (Yang, J. et al, 2016; Palese and Usai, 2018)
Customer Review	• Beside decreasing the cost of customer support and return of product, customer review enhances customer engagement and improves decision making process in E-commerce platforms (Weathers et al, 2015) • E-commerce customers regularly access online reviews to get pre-purchase information and in most cases they report that they are influenced by other online reviews when making their final decision (Zhu and Zhang, 2010; Li and Hitt, 2010) • Reviews are helpful that can create greater impact and major influence on decision customer make upon purchasing certain product factors such as word-of-mouth, rating, style and content, accuracy and coherence of the language, readability as well as subjectivity (Willemsen et al, 2011; Baek et al, 2012; Lee et al, 2018)
Sentiment & Text Analysis	• Problems associated with other languages as majority of sentiment analysis algorithms are designed for English Language (Vinodhini and Chandrasekaran, 2012); can cause the risk of capturing the complete opinion and sentiment of customers (Lo et al, 2017) • Sentiment analysis can assist the product review text for e-commerce platforms is to employ machine learning tools (Xu et al, 2020) • Sentiment and text analysis is one of the popular and at the same time challenging ways to identify and recognize opinion, attitude and emotion of the customers (Lee and Rha, 2018) • Automated sentiment and text analysis system is essential to better comprehend customers' actual needs and wants (Liu and Zhang, 2012) • "Crawlers" as an effective module to aggregate data from the Web will be used to generate data/information from online reviews (Cho and Garcia-Molina, 2002) • Sentiment analysis will be used for linguistics and semantics and text analysis for collecting data on useful keywords (Fang et al, 2018) • Topic modeling will be employed as a statistical model to uncover the abstract topics when gathering product/customer reviews (Vayansky and Kumar, 2020)
Digital Content Marketing	• Producing quality content to attract customers is a challenge for business (Humphreys and Wang, 2018) • Practitioners raise the concern regarding the level of integration between text analytics and the content management system (Halper et al, 2013) • Digital content marketing is considered to be an important relationship marketing tool that is viewed to assist companies and businesses to develop and maintain customer connection with brands, thus contributing to the firm performance (Hollebeek and Macky, 2019) • Digital content marketing can help accessing to quality sale leads, using brand-orientated messages, and more importantly brand content flow among E-commerce platform users (Wang et al, 2019; Ashley and Tuten, 2015; Kilgour, et al, 2015).

Table 2.1: Literature Review Summary

3. Literature Review

Below paragraphs outline the structural insight on the main topics that are the backbone of the study and extracted from the reviewed literatures. The inter-relation and integration of customer review in E-commerce platforms and how sentiment and text analysis can assist creation of effective digital contents for marketing is discussed. This in return forms the future possible research opportunities and the research framework that can be considered for this study.

3.1. E-commerce

E-commerce is the terminology often used to describe any type of business that virtually exist or is available on Web site or internet to promote and sell certain product of services. Anderson Consulting (1999) defines E-commerce as "the conduct of business among e-enterprises and customers, where e-business is a business enterprise with capability to exchange value (money, goods, services and information) electronically" (cited in Cox and Dale, 2001, p. 121). For any E-business to be successful, all the features of its service including procurement network, purchase systems and customer support mechanisms must be integrated. In other words, beside setting up an online system providing goods and services, companies are required to ensure fulfilment and completion of order efficiently without error or delay. Besides the volume of users and safeguarding the capacity in supply chain, E-commence platform needs to offer relevant facilities for after purchase feedback.

The ultimate aim of E-commerce platforms is to offer interaction, pre-purchase and after-purchase customer support as well as enhanced decision making by employing various design features (Helander and Khalid, 2000). Customer interaction is thought to be one of the important factors as it can provide valuable feedback with regards to products and services offered using E-commerce platforms. Such characteristics can eventually ensure customers to return to the website and create awareness and loyalty, as feedbacks are being received in the form of customer reviews. Another key factor contributing towards the E-commerce and e-business success is quality improvement through continuous evaluation of customer review (Tan et al, 2007). Without taking into account customer feedback and review from both internal and external customers, a business will not be able to deliver appropriate level of goods and services quality and this can neglect customer satisfaction. While speed in delivering products and services is one of the main consideration for customers to use E-commerce platforms, negative word-of-mouth seams to contribute more in customers' decision making process.

The way currently E-commerce platforms operate, majority of customers provide review comments based on the post-purchase experience and decisions. Nonetheless, E-commerce tends to encourage customer to give their written feedback and reviews on products and services delivered for various benefits including building customer trust, cultivating Web site's credibility, improving the ranking of the search engine, leveling up the rate of conversation as well as social proofing (Yang, J. et al, 2016; Palese and Usai, 2018). If these reviews are only taken as comments or feedbacks although they contain negative remarks, they may create distrust among existing and prospective customers. On the other hand, if these reviews or sentiments are authentic with genuine views, they can be beneficial for E-commerce platforms and in return improve the quality of the reviews and new customer attention. Consequently, the requirement of a system is evident in order to facilitate both the customer and E-commerce sellers to improve product, price, place and promotion (4Ps) and/or services with the aim to enhance the purchase decision making process.

3.2. Customer Review

Customer reviews, being feedbacks provided about delivered products, is receiving high attention by practitioners due to few reasons. First, customers consider products reviews a selection criteria and main source of information about characteristics of a product (Zhu et al, 2010). Second, beside decreasing the cost related to the customer support or return of product, the customer review enhances customer engagement with the E-commerce platforms and improves customers' decision making process (Weathers et al, 2015). Therefore, it is important for E-commerce businesses to pay attention to the customer and product reviews in order to both reduce their cost as well as enhance the customer satisfaction.

In relation to the above and the fact that most of the product reviews in case of E-commerce platforms are provided by customers using Web sites, online reviews receive significant attention by companies. E-commerce customers regularly access online reviews to get pre-purchase information and in most cases they report that they are influenced by other online reviews when making their final purchase decision (Zhu and Zhang, 2010; Li and Hitt, 2010). According to a survey conducted by BrightLocal (2016), 91% E-commerce customers have read online reviews to decide on the quality of the local business (cited in Banerjee et al, 2017, p. 17). Hence, online reviews have major influence on sales of goods and services offered by e-businesses, and ultimately improved companies revenue.

In addition to the above, it is important how helpful and useful the online reviews are in terms of content. Yet, reviews are helpful that can create greater impact and major influence on decision customer make upon purchasing certain product. Factors such as word-of-mouth, rating, style and content, accuracy and coherence of the language, readability as well as subjectivity (Willemsen et al, 2011; Baek et al, 2012; Lee et al, 2018) of the reviews can significantly affect the level of helpfulness and usefulness of online comments and reviews. With this regards, credibility and trustworthiness of the online review also play an important role in effectiveness of comments. If feedbacks are drafted and provided in a manner in which they can be readable and reflect the actual value of the product and services received by customer, they can then influence the buyers' decision making process. According to Cao (2020), a well communicated review can positively affect the credibility and level of persuasiveness, and this can be resulted from language is used for the feedback given. Hence, there has to be a possibility through a systematic mechanism, which can provide the opportunity for customers to be able to provide effective and comprehensive reviews both before and after purchase using E-commerce platforms.

3.3. Sentiment and Text Analysis

With the emphasis that Web 2.0 has on user contribution and interaction of users in internet platforms, large amount of data is produced and made available which includes users' sentiments and opinion. Because the large volume of information and data in form of massive text are expensive to store and maintain, it is important that useful and worthy sentiments are extracted using text data mining and natural language processing methods and techniques (Xia. et al, 2016). It is evident that sentiment and text analysis are widely used in many sectors including social media platforms, marketing and e-business as well as financial analysis and forecasting (Zhou et al, 2016). One of the ways in which sentiment analysis can assist the product review text for e-commerce platforms is to employ machine learning tools (Xu et al, 2020).

Sentiment analysis and evaluating the customer purchasing trend and buying behavior not only can provide guidance for customer, but it can enable e-commerce platforms to take necessary initiatives to improve quality of delivered goods and services. According to Zeng et al (2019), sentiment analysis offers automatic analysis of customers' subjective commentary test, which is an indication of emotional status before and after purchase. Many text minding methods such as machine learning and deep learning can be used for implementation of an

effective sentiment analysis in e-commerce platforms and archive good results in analyzing customers' opinion about products and satisfaction level (Chen, Y. et al, 2019).

Sentiment and text analysis is one of the popular and at the same time challenging ways to identify and recognize opinion, attitude and emotion of the customers (Lee and Rha, 2018). One of the challenges, beside the fact that not always customers express their view points in the same way, is associated with sentiment analysis being linked to the opinion words that can be positive in one situation and negative in another. In some cases, customers face challenges in interpreting others' thoughts based on limited words used in the text reviews due to the lack of context or a particular language used and/or studied by sentiment analysis practitioners. Hence, sentiment calcification is proposed to deal with such contexts with certain objects (Vinodhini and Chandrasekaran, 2012).

The increase in volume of online reviews in the emerging E-commerce platforms requires a more appropriate and effective sentiment and text analysis. Businesses in general and E-commerce platforms in particular need to give greater attention to customers' reviews and opinions that are reliable, and often found challenging to produce consistent results due to growing significance of online reviews. In consequence, an automated sentiment and text analysis system is essential to better comprehend customers' actual needs and wants (Liu and Zhang, 2012) and in due course ensure buyer satisfaction.

3.4. Digital Content Marketing

With advancement of technology content marketing, which is a digital marketing phenomenon is evolved. Generation, publication and distribution of relevant contents on digital platforms with consideration of interests of a targeted audience is known as digital content marketing (Rakic and Rakic, 2014). According to many academics and practitioners (Handley and Chapman, 2010; Halvorson and Rach, 2012; Mosteller and Poddar, 2017), content marketing is observed to be one of the crucial factors in enhancing the performance of digital marketing activities. Further, digital content marketing is considered to be an important relationship marketing tool that is viewed to assist companies and businesses to develop and maintain customer connection with brands, thus contributing to the firm performance (Hollebeek and Macky, 2019).

Subsequently, effective, valuable and consistent digital marketing contents will not only result in increased sale, but they contribute to buyers' loyalty to the firms as they seen as rewarding. Taiminen and Ranaweera (2019) argue that not only e-business, but also customers can gain benefit from digital content marketing by offering E-commerce user-generated insides such as electronic comments or word-of-mouth. There is no doubt that persuasive online reviews and contents that reflects customers of E-commerce platform purchase experience is among the top priorities in today's digital marketing as they enhance buyer and seller engagement. The debate is addressed by looking and factors such as accessing to quality sale leads, using brand-orientated messages, and more importantly brand content flow among E-commerce platform users (Wang et al, 2019; Ashley and Tuten, 2015; Kilgour, et al, 2015).

With all the above, the application of digital content marketing for E-commerce is somewhat foreseeable due to existing completion in the industry and among rivals. Nevertheless, identifying the most appropriate and appealing content is always a concern amongst E-commerce players. Effective processing of online reviews and feedbacks provided by customers will be a key dominant using text analysis and eventually propose prevailing content for marketing purposes. As a result, it apparent that an automated and effective mechanism and system is needed to be proposed and developed for E-commerce practitioners, which is not only operative and user-friendly, but can influence the customer purchase decision positively.

3.5. Analysis of Literature and Addressing the Research Gap

As Darke et al (2016) argued, the quality of online reviews and comments can be improved if customers receive desired products and services, therefore prospective online buyers' purchase decision making process improves. The opinioned and factual perspective of online feedbacks/reviews are important for better understanding of customers' expectation. Although the extraction and generation of information from online reviews is practiced by many E-commerce players using sentiment analysis and the process achieves the expectations to a certain level, identification, gathering and mining the most vital and dominant keywords can be facilitated through rigorous text analysis. Hence, the linguistics examination and breakdown facilitated through text analysis is yet another phase of the process which receives high attention recently due to the multi-lingual acceptance of online reviews (Humphreys and Wang, 2018), where dealing with limitations faced by other languages used such as Malaysian Language (Bahasa Malaysia).

Moreover, as the significance of digital content marketing is increasing, E-commerce can gain substantial benefit from text analytics for creation of effective contents through using the keywords identified and generated with this mechanism. The identified keywords can be directly utilized in creating appropriate contents for marketing purposes and ultimately improve customers' decision making. The sentiment and text analysis process will be supported by suitable machine learning algorithm and artificial intelligence integration. The proposed mechanism is thought to not only address the current research/knowledge gap, but contribute to customers' purchase experience in the context of E-commerce platforms.

4. Future Research and Limitations

Throughout the study and for collecting and generating data/information on online customer reviews from well-known Malaysian E-commerce sites "Crawlers", which is thought to be one of the effective modules to aggregate data from the Web (Cho and Garcia-Molina, 2002). As the nature of study will be based on data collection the quantitative method for data collection will be used to gather data from both online customers and E-commerce businesses. The study will include Three (3) main steps as follow, which is also illustrated in Figure 1.2;

1. The relevant customer/product reviews will be used for booth Text Analytics and Sentiment Analytics with the support of suitable Machine Learning algorithm. According to the suitability of the methodology, the sentiment analysis will be used for linguistics and semantics and text analysis will be used for collecting data on useful keywords (Fang et al, 2018) from customer/product reviews and feedbacks.
2. The results of sentiment analysis is expected to be polarity and magnitude characteristics (Singh et al, 2015) of the reviews and feedbacks, and semantic analysis is expected to reveal relevant syntactic structure of independent meanings of a particular language. This will also help to gather features of specific linguistic and cultural context, which in the case of this study will be covering English and Malaysian Language (Bahasa Malaysia). In this line, topic modeling will be employed as a statistical model (Vayansky and Kumar, 2020) to uncover the abstract topics when gathering product reviews. This is return will help to learn about hidden semantic structures.
3. Ultimately, the study aims to propose a framework and blueprint to design a Web-based content creation with the help of machine learning algorithms and artificial intelligence, which the useful and persuasive keywords for tis content creation will be expected from text analysis conducted.
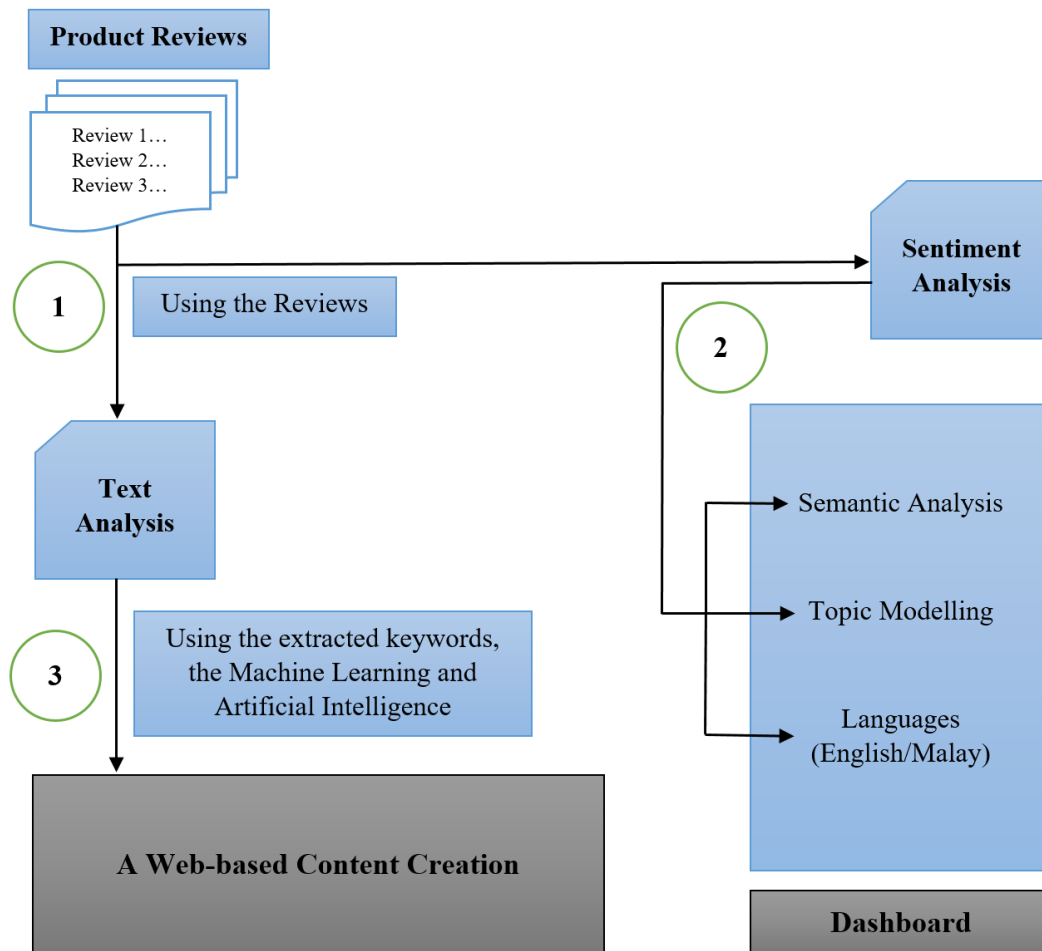
Figure 4.1: Research Framework

By the end of this study, a framework to design and develop a plugin for web browsing is proposed, which facilities first, a report to be generated for both English and Malaysian Language (Bahasa Malaysia) using semantic analysis. Second, a topic modeling mechanism for both English and Malaysian Language (Bahasa Malaysia) using semantic analysis, and third, a framework for Web-based content creation for E-commerce platforms and users.

One of the limitations associated with this study is that the proposed framework is applicable only to certain rejoin with English and Malaysian Language and the cultural and language diversity is not considered in the study. Moreover, the study is only proposing a conceptual framework and blueprint for the best practice and mechanism that can be used to address the research gap and the problem statement and therefore, the application development is not part of this research.

5. Concluding Remarks

As the competition among E-commerce businesses is increasing in every industry, only high performers in the field will be able to gain sustainable competitive advantage to stay profitable. Therefore, this study/literature review is conducted with intention to propose a framework and in more practical stage, a Web-based content creation mechanism to assist digital content marketing in creation of more effective contents. In return, the effective contents are expected to enhance customer's decision making process.

As currently online customers are facing challenges associated with purchase decision making and there are existing limitations in research with regards to suitable structure to assess the impact of online reviews, this study aims to propose a systematic mechanism to extract influential reviews and use the information to create more effective contents for digital marketing purposes in the context of E-commerce platforms. To this end, Sentiment and Text analysis are considered to be appropriate methods to identify and extract data from customer's review and with the support of artificial intelligence.

The final outcome of this study is to propose and design a plugin for web browsers and feature are expected to facilitate content creation which adds remarkable value to E-commerce platforms performance as well as building trust among E-commerce customers by improving the online pre-purchase decision making.

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Appendices

Feature of the article	Online reviews and Predictive Model
Author(s) and the title of the article	Banerjee, S. et al. 2017 Whose online reviews to trust? Understanding reviewer trustworthiness and its impact on business
Name of the journal/conference	Decision Support Systems
Research motivation stated by the author(s) (Why is the research important? What is the knowledge gap?)	Impact of online reviews on business Trustworthiness of reviewers influence acceptance of reviews and eventually on sales
Objective(s) & research question(s) (What is going to be done?)	Objective: Reviewer trustworthiness positively moderates the impact of review-based online reputation on business patronages Question: How to estimate and predict it, if no direct proxy is available?
Concepts and theories used	Source Credibility Theory
Methodology, data collection and data analysis (How was the research conducted?)	The author have used local business review data from Yelp.com / Robust Regression Method is used to analyze the data
Key findings or results/ New identified themes (what has been found by the author(s)?)	Author proposes a theoretical model with several reviewer characteristics (positivity, involvement, experience, reputation, competence, sociability) affecting reviewer trustworthiness
Contributions to knowledge (What is the new knowledge/ How the identified knowledge gap is filled?)	Firstly, businesses should focus on building a good review-based online reputation; secondly, they should encourage top trustworthy reviewers to review their products and services; and thirdly, trustworthy reviewers could be identified and ranked using reviewer characteristics
Limitations (possibility for future research, still existing knowledge gap)	First, author used data only from one review site Yelp, which only includes local businesses. So it needs to be tested whether the findings are generalizable for other product review websites as well. Second, author used check-ins to a business posted by Yelp customers, when they visit the business, as a proxy for business patronages. While it is a good indicator based on actual physical presence of a customer at the business shop, it is still limited compared to the total number of footfalls in the business since most of the customers may not be checking in their location on Yelp.
Your own reflections (what have you learnt, what was already known to you, what was surprising, what could have been done in a better way?)	Although the importance of online reviews is evident, there are noticeable raw and unstructured characteristics in this regards, and comprehensive analysis on the online customer reviews needed as such reviews are significantly essential and powerful marketing tools.

Table 1