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Online Information Review Research and Its Future Direction: A Literature Review

Philip Kofi Alimo

Masters Student, School of Traffic and Transportation, Lanzhou Jiaotong University, China

Lawrencia Agen-Davis

Masters Student, School of Economics and Management, Lanzhou Jiaotong University, China

Theophilus Teye Amanor

Masters Student, School of Economics and Management, Lanzhou Jiaotong University, China

Abstract:

Online reviews offer businesses feedbacks on their products and services toward proper planning and customer satisfaction. Previous studies have helped in improving innovation and giving business solutions on this important aspect of business management, but also identified some challenges. The purpose of this review is to identify research gaps in the extant literature and recommend them for future studies, relevant to online information. This paper conducts a comprehensive literature review of 64 peer-reviewed publications (2008 till date) sampled from selected SCI/SSCI papers on online reviews. The study analyzes the major research problems identified in the literature, identifies the methodologies and theoretical frameworks applied and conducts qualitative content analyses of the findings. The findings reveal the need for more multilingual online review and recommender systems, addition of more consumer review reward-mechanisms and motivations, enhancing interest of netizens in eWOM communications and the need for new features to disallow review modification after submission. It further presents recommendations for future research, relevant to online information review to increase reliability, improve ranking, user reference and usefulness of reviews.

Keywords: Online review; consumer review; website review; product review; market review; online user feedback; customer feedback

1. Introduction

Online review is an electronically generated evaluation and recommendation feedback from users of products such as online retail platform, e-payment app, ticket website, shops or services (Sotiriadis, 2017). The importance of consumer reviews has been overwhelmingly established in both research and practice. It is an important matrix for consumer decision-making and even competition among businesses to entice potential customers (Xie *et al.*, 2014; Schuckert *et al.*, 2015). Torres *et al.* (2015) submitted that online-generated feedback is necessary for managers to know the experience of their customers with regards to their service quality, management of their innovations and how to strategically improve them as recommended in (Sotiriadis and Van Zyl, 2015; Torres *et al.*, 2014; Zhou *et al.*, 2014).

The extant literature has recently been finding solutions to some notable challenges faced by managers of online reviews namely: (i) usefulness of online reviews (Liu and Park, 2015; Marinkovic and Kalinic, 2017; Sebastianelli and Tamimi, 2018; Zhang and Lin, 2018), (ii) quality and reliability of consumer reviews as against the increasing quantities (Yagci and Das, 2018; Yang and Chao, 2018; Chakraborty, 2019), (iii) review-based ranking of reviews (Chen *et al.*, 2017; Saumya *et al.*, 2018; Lee *et al.*, 2019), (iv) user recommendation (Xu and Yao, 2015; Luan *et al.*, 2018) and (v) the valence or effectiveness of the reviews (Baker and Kim, 2019; Song *et al.*, 2020; Hong *et al.*, 2020). Varied research methodologies have been applied in these studies such as statistical experiments (Kwok and Xie, 2016; Zhang and Lin, 2018), evaluation and categorization of online reviews (Chen, 2016), surveys (Lee *et al.*, 2017; Liu *et al.*, 2018), modeling (Pan *et al.*, 2018) and designed theoretical frameworks (Banerjee and Chua, 2014).

There are five literature reviews (Schuckert *et al.*, 2015; Weller, 2015; Kwok *et al.*, 2017; Singh *et al.*, 2017; Sotiriadis and van Zyl, 2017) which sought to evaluate some of problems in the extant literature but the ever-dynamic market still demands for periodic reviews to solve emerging issues. According to Kwok *et al.* (2017), the essence of a comprehensive literature review is to identify fertile areas for future investigation. The objective of this research is therefore to identify research gaps in the extant literature and recommend them for future studies in online information. To do this, the authors analyze the major research problems identified in the literature, identify the methodologies and theoretical frameworks used, and conduct content analyses of the findings. For the purpose of this review, 64 peer-reviewed publications (from the year 2008 till date) have been sampled from selected SCI/SSCI papers listed in Web of Science Core and Scopus. Among them are Emerald-published journals and other e-commerce-based journals. The sampled dataset has been coded into 5 themes and analyzed systematically via content analyses. The findings are first presented in tables and further analyzed. According to Kwok *et al.* (2017) comprehensive reviews of quality papers covering consumer online reviews are vital in online information research and beneficial to both academia and practice as

it gives a roadmap to further developments in the online market. The findings reveal the need for more multilingual online review and recommender systems, addition of more consumer review reward-mechanisms and motivations, enhancing interest of netizens in eWOM communications and the need for new features to disallow review modification after submission. The proposed recommendations for future research, are relevant to both the science and practice of online information review because they can increase reliability, improve ranking, user reference and usefulness of reviews.

2. Methodology of the Review

2.1. Sampling and Coding

Krippendorff (2004) explained that a reliable content analysis should include: a specification of what the data is, how it was sampled, the scope of the analysis, its relevance and the problem it seeks to solve. This review therefore, begun with sampling and coding of publications. The selected peer-reviewed papers were sampled from Web of Science and Scopus databases (SCI/SSCI indexed) comprising: Online Information Review, Electronic Commerce Research and Applications, International Journal of Electronic Commerce and other Emerald-published journals. The 64 papers sampled, were then coded into: usefulness of reviews, quality and reliability of reviews, ranking of reviews, consumer reference and literature review. The number of publications per code is presented in brackets. These are shown in Figures 1 and 2.

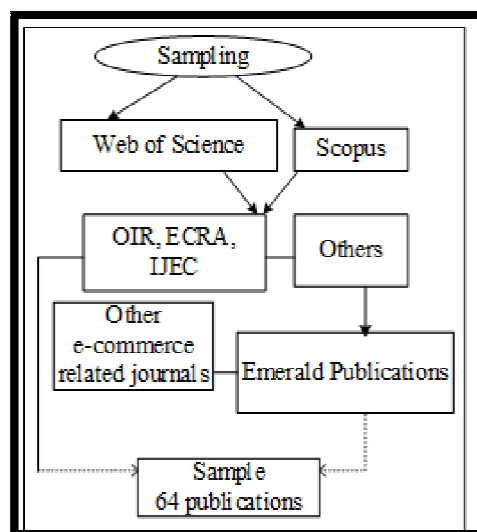


Figure 1: Sampling Flow Chart

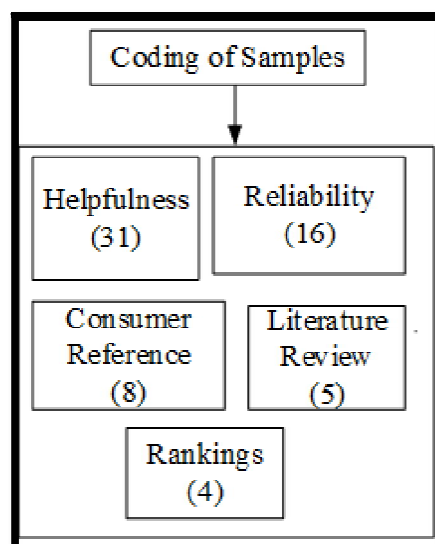


Figure 2: Sample Coding

2.2. Research Questions

This literature review seeks to answer the following questions:

- What are the major research problems identified in the extant online review literature?
- What are the common research methodologies and approaches identified?
- What are the findings in the extant literature?
- Based on the findings and trends identified, what are the research gaps that need further research and innovations?

2.3. Approach to Content Analyses of Publications

Extensive content analyses of the selected publications were conducted with specific focus on the research methodologies and the findings. The findings were first shown in Tables 2 to 5, followed by the analyses in section 4. The sampled papers include 5 literature review papers on online reviews (Kwok *et al.*, 2017; Schuckert *et al.*, 2015; Singh *et al.*, 2017; Sotiriadis and van Zyl, 2017; Weller, 2015).

2.4. Overview of e-Commerce Publications

Kwok *et al.* (2017) gave an indication of the increasing research in online reviews. The authors chose papers from the selected journals because of their expertise in online information review and e-commerce, as indicated in the volume of publications presented in Table 1.

Journals	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total	JIF
Online Information Reviews	59	68	54	58	56	68	53	52	63	64	76	94	765	1.928
Electronic Commerce Research and applications	36	36	58	60	54	42	34	17	59	45	74	69	584	2.911
International Journal of Electronic Commerce	19	29	25	24	24	18	18	23	12	23	24	24	263	3.439
Sub-total	114	133	137	142	134	128	105	92	134	132	174	187	1612	

Table 1: Volume of e-Commerce Publications

Source: Scopus Database

3. Findings and Methodologies Identified in the Literature

Tables 2, 3, 4 and 5 present a summary of the methodologies and findings in the selected publications under four themes: usefulness and valence of reviews, quality and reliability of reviews, consumer reference and ranking of reviews respectively. They are analyzed in section 4 according to the research questions.

Bibliography	Research Methodology Applied	Summary of Research Findings
Zhang and Lin, 2018	Statistical modeling, designed a multilingual review helpfulness prediction framework	The test confirmed the applicability of utilizing the framework to predict multilingual sources of reviews.
Utz <i>et al.</i> , 2012	Experiments using 137 consumers	Consumer reviews are important in consumer decision making, indicating that online consumer communities do empower consumers.
Korfiatis <i>et al.</i> , 2012	Readability test using Flesch-Kincaid Reading Ease index, constructed a theoretical model	Review readability has a greater effect on the helpfulness ratio of a review than its length.
Song <i>et al.</i> , 2020	Classical Hotelling Model	Under asymmetric reviews, the third party may be induced to sell in both the fit-dominates-quality case and the quality-dominates-fit case, implying that the retailer's review system can attract the third party.
Hong <i>et al.</i> , 2020	Text mining techniques	Logos, Pathos, and Feature statements have significant roles in improving the persuasiveness of online reviews, while Ethos has less impact in comparison.
Ahmad and Laroche, 2016	Using cognitive appraisal theory to examine discrete emotions	Discrete emotions do not have a universal effect on the helpfulness of the reviews.
Chakraborty, 2018	Data sampled from e-commerce communities on social media platforms	Marketers should concentrate more on brand awareness and perceived value.
Cui <i>et al.</i> , 2012	Panel data of 332 new products were analyzed with descriptive statistics	The volume of reviews has a direct effect on new product sales, which diminishes over time.
De Maeyer, 2012	Literature review	The application of text mining and econometric techniques is on the rise.
Gensler <i>et al.</i> , 2016	Human associative memory mode	The proposed network analysis approach allows managers to monitor brand images on a regular basis.

Bibliography	Research Methodology Applied	Summary of Research Findings
Chang and Wang, 2011	Bagozzi (1992) self-regulation processes	e-Service quality and customer perceived value influence customer satisfaction and loyalty. Customers with a high perceived value have a stronger relationship between satisfaction and customer loyalty than customers with a low perceived value.
Huang and Korfiatis, 2015	278 questionnaires, experiments	Reviews that are read in the context of mobile app trials will change readers' attitudes through the emotional process, but have little effect on the cognitive process.
Koh <i>et al.</i> , 2010	Compare the rating behavior of Chinese and American reviewer using data collected from Douban.com and IMDB.com.	Under-reporting is more prevalent among US online network, thus online reviews are a better movie perceived quality proxy in China and Singapore than in the US.
Kwok and Xie, 2016	Tested a linear regression model with 56,284 consumer reviews, 797 manager responses, 1,045 Texas hotels from 2003 to 2012	Rating, number of words, reviewer's gender, reviewer's experience in status, as well as manager response do affect the usefulness of online reviews.
Lee <i>et al.</i> , 2011	Experiments	Online consumer reviews are more influenced by trust in online shopping malls than online adverts. The greater the perceived credibility of OCRs among potential consumers, the higher the purchase intention.
Lee <i>et al.</i> , 2017	Negative binomial regression	Customers are more influenced by negative reviews than positive ones when making purchase decisions.
Lee, 2018	Zero-inflated Poisson regression	A reviewer who has more friends and is more experienced in giving reviews is likely to be more influential in generating a perceived value of the online review.
Li <i>et al.</i> , 2013	Laboratory experiment	The source and content-based review features have direct impact on product review helpfulness. A customer-written product review with a low level of content abstractness yields the highest perceived review helpfulness.
Liu <i>et al.</i> , 2018	Experiment and survey	Online reviews boost men's purchase intention in the hedonic context and women's purchase intention in the utilitarian context.
Marinkovic and Kalinic, 2017	Survey of 224 respondents	Customization moderates the influence of mobility and the influence of trust on customer satisfaction.
Niu and Fan, 2018	Grounded Theory approach was used to conduct multiple case studies	An online review management system should go beyond response management to incorporate formality, centralization, specialization, response, customization, integration and review analytics.
Pang and Qiu, 2016	Experiments	Review chunking has a negative effect on product attitude with respect to consumers with low motivation to think.
Park and Nicolau, 2015	5,090 reviews of 45 restaurants in London	People perceive extreme ratings as more useful and enjoyable than moderate ratings.
Purnawirawan <i>et al.</i> , 2012	T-tests and ANOVA	Review sequence has an important effect on the perceived usefulness.
Racherla and Friske, 2012	OLS regression	The review characteristics and the reviewer, both correlate in perceived usefulness of a review.
Sebastianelli and Tamimi, 2018	Experiments	e-Tailer reputation has the greatest impact on initial trust perceptions, followed by the summary review star rating of the product.
You <i>et al.</i> , 2012	Designed a framework for review mining	Satisfaction is influenced more by quality than price although price is mentioned more in customer reviews.
Zhao <i>et al.</i> , 2015	Survey and regression tests	Review valence, comprehensiveness significantly influences people's online booking intentions.
Xie <i>et al.</i> , 2014	Panel data analysis of online consumer reviews and management responses of 843 hotels.	Rating of purchase value, location and cleanliness, variation and volume of consumer reviews, and the volume of management responses are significantly associated with hotel performance.
Torres <i>et al.</i> , 2014	Questionnaires and interviews, regression analysis	Customer satisfaction scores and online consumer-generated feedback positively correlate.

Table 2: Selected Publications on Usefulness and Valence of Reviews

Bibliography	Research Methodology Applied/Context	Summary of Research Findings
Yagci and Das, 2018	DLIQ measure	Design-level information quality is a reliable predictor of actionable design information in the review database.
Yule-Kim, 2019	Experiment using an online hotel booking website	Collectivism, femininity, uncertainty avoidance, and indulgence are positively associated with consumers' reliance on online review ratings, while power and distance tended to reduce the effect.
Brody and Elhadad, 2010	Designed a system for extracting aspects and determining sentiment in review text	The system is effective on both component tasks, and achieves similar results as other complex semi-supervised methods.
Baker and Kim, 2019	Qualitative critical incident technique, qualitative experimental design	Posters and readers use language complexity and emotions in exaggerated reviews. Language style and emotions, influence customer perceptions of websites.
Banerjee and Chua, 2014	Designed a theoretical framework	The differences between authentic and manipulative reviews in terms of comprehensibility and informativeness were more conspicuous for negative entries. On the other hand, the differences between authentic and manipulative reviews in terms of writing style were more conspicuous for positive entries.
Blooma <i>et al.</i> , 2012	Dataset of 1,600 question-answer pairs were selected from Yahoo.com and analyzed	The features identified as strongly associated with high-quality answers include positive votes, completeness, presentation, reliability and accuracy. Features weakly associated with high-quality answers were high frequency words, answer length, and best answers answered. Features related to the asker's user history were found not to be associated with high-quality answers.
Chakraborty, 2018	Data sampled from e-commerce communities on social media platforms	Marketers should concentrate more on brand awareness and perceived value.
Chen, 2016	Analysis of data sampled from iPeen.com in Taiwan from 2009 to 2013	Online retailers should consider different guidelines and effective reward mechanisms for customer feedback, depending on whether that feedback is for search goods or experience goods and the status of the reviewer is expert or novice.
Chou and Chang, 2009	Experiment	The results confirmed the distinguishing capability of the potential term characteristics proposed in the method.
Dellarocas <i>et al.</i> , 2010	Quantitative statistical analysis	Consumers prefer to post reviews for products that have insufficient supply. At the same time, they are likely to contribute reviews for products that have been commended by others.
Jin Ma and Lee, 2014	Survey of 2080 online shoppers	Review manipulations largely affect consumer trust.
Kwon and Sung, 2012	Experiments	The proposed interactive effects of self-construal and self-regulatory goals can vary according to product categories.
Lee <i>et al.</i> , 2008	Elaboration likelihood model, experiment using 248 college students	As the number of negative reviews increase, the high-involvement consumers consider the quality of those reviews to make a decision whilst the low-involvement consumers do not evaluate the quality. They rather follow the opinion of the majority.
Peng <i>et al.</i> , 2016	Interviews with 16 online-shoppers	When consumers are aware of the three types of manipulation tactics (perceived deceptiveness, ease of detection, unethicity) their perceived deceptiveness and unethicity tend to be different.
Yang and Chao, 2018	Experiment using keyword-based sentiment analysis	Sentiment annotation can increase information quality and user's intention to read tourism reviews.
Sher and Lee, 2009	Online experiment with 278 undergraduates	Consumers who are skeptical, form their opinion based on some limited information but those who are not skeptical, make their decision based on the review quality.
Perez-Aranda <i>et al.</i> , 2018	Correlation/regression analyses of data from 335 hotels	The hoteliers chose hotels based on commitment and competence rather than online reviews.

Table 3: Selected Publications on Quality and Reliability of Reviews

Bibliography	Research Methodology Applied/Context	Summary of Research Findings
Xu, 2018	Text regression of online reviews	All positive and negative textual factors do not correlate with satisfaction.
Xu and Yao, 2015	Questionnaire survey of 208 online consumers	The information credibility and quantity sufficiency of online reviews are positively associated with argument quality.
Kim <i>et al.</i> , 2009	Experts evaluated web documents	The recommender system is effective where there is a limited volume of evaluation data from general users.
Luan <i>et al.</i> , 2018	Examined consumers' browsing patterns and attention characteristics using an eye tracking device	Context congruity effects can influence consumers' product recommendation attention. Recognition is influenced not only by context congruity effects but also by involvement.
Lee and Ma, 2012	Online survey	Consumer attitudes are influenced by both benefits and costs.
Baum and Spann, 2014	Online Experiment	Providing online consumer reviews is not always beneficial for an online retailer, as inconsistent recommendations do negatively influence consumers' purchase decisions.
Pan <i>et al.</i> , 2018	Multilevel mixed effect probit model	The volume of friend reviews has a strong impact on the target user's posting behaviour than that of the crowd.
Fu <i>et al.</i> , 2015	Experience survey of online shoppers	Consumers who have a high interest in eWOM communications usually post positive online reviews whilst the others are driven by peers.

Table 4: Selected Publications on Consumer Reference

Bibliography	Research Methodology Applied/Context	Summary of Research Findings
Lee <i>et al.</i> , 2019	Experimented a network for product ranking	Proposed a novel unified approach for learning to rank products based on online product reviews.
Saumya <i>et al.</i> , 2018	Used random-forest classifier to classify reviews into either low or high quality	Proposed a system that provides fair review placement on review listing pages and makes all high-quality reviews visible to customers on the top. The experiment showed that inclusion of features from product description data and customer question-answer data improves the prediction accuracy of the helpfulness score.
Chen <i>et al.</i> , 2017	Designed a Bayesian model to simulate the formation of consumers' perceptions. The goal is to get honest feedbacks from users	Consumer perception about the seller is influenced by both how honest the reviews are and the quantity of the reviews.

Table 5: Selected Publications on Ranking of Online Reviews

4. Content Analyses of the Findings

4.1. Usefulness of Reviews

In the past decade, research on usefulness of consumer reviews has been solving issues related to how to do review predictions (Purnawirawan *et al.*, 2012; Zhang and Lin, 2018; Song *et al.*, 2020), review analyses using website data (Koh *et al.*, 2010; Cui *et al.*, 2012; Li *et al.*, 2013; Xie *et al.*, 2014; Park and Nicolau, 2015; Kwok and Xie, 2016; Chakraborty, 2018), experiments using consumers for comparative analyses on a country-to-country and website-to-website bases (Chang and Wang, 2011; Lee *et al.*, 2011; Utz *et al.*, 2012; Huang and Korfiatis, 2015; Lee *et al.*, 2017; Liu *et al.*, 2018), data mining techniques (You *et al.*, 2012; Hong *et al.*, 2020), theoretical applications to study customer emotions (Ahmad and Laroche, 2016; Gensler *et al.*, 2016; Niu and Fan, 2018) and how gender affects reviews (Kwok and Xie, 2016; Liu *et al.*, 2018).

Zhang and Lin (2018) investigated into predicting from review-sources with different languages. The designed framework can predict multilingual sources of reviews by generating numerical values which are then analyzed. It can also be used to do sentiment analysis and text mining. The framework comprises: topic scoping, data acquisition, data filtering, data processing, and statistical modeling.

Cui *et al.* (2012) observed that the volume of reviews has a direct effect on new product sales, which diminishes over time. Their study analyzed the relationship between online reviews and new product sales using an integrative framework comprising two matrices (volume and valence of reviews) with product life cycle and product category used as moderating factors. The results show that although volume of reviews has a direct effect on new product sales, the effect diminishes over time.

Hong *et al.* (2020) tested persuasiveness using persuasion methods: Ethos (the ability of a reviewer to gain the trust of other consumers through their personal experience or expertise), Logos (the ability of reviewers to gain other consumers' approval through common-sense interaction), and Pathos (ability to influence people by feelings). The results show that Logos, Pathos and Feature statements have more impact on the persuasiveness of online reviews than Ethos. This implies that managers must work on giving customers good purchase experience especially for first-timers. Seller reputation has the greatest impact on initial trust perceptions, followed by the summary review star rating of the product (Sebastianelli and Tamimi, 2018). You *et al.* (2012) also established that although price is mentioned more in customer reviews, quality plays a more significant role in consumer satisfaction.

The effect of gender on consumer reviews as studied in (Kwok and Xie, 2016; Liu *et al.*, 2018) also reveal that men are influenced more in the hedonic context (how the product serves their current need) whilst women are influenced more in the utilitarian context (maximum utility of the product/service).

4.2. Quality and Reliability of Reviews

Research on the quality of the reviews has become relevant due to the human behavioral factors such as sentiments, manipulations and exaggerations. According to Dellarocas *et al.* (2010) consumers prefer to post reviews for products that have insufficient supply. At the same time, they are likely to contribute reviews for products that have been commended by others. Chen (2016) emphasized the need for reward mechanisms for consumer feedbacks in order to avert these challenges.

Studies into these challenges have been investigated as follows: information quality (Lee *et al.*, 2008; Blooma *et al.*, 2012; Yagci and Das, 2018), sentiments (Brody and Elhadad, 2010; Yang and Chao, 2018), exaggerations (Baker and Kim, 2019), manipulations (Jin Ma and Lee, 2014; Peng *et al.*, 2016).

Brody and Elhadad (2010) designed a system for extracting aspects and determining sentiment in review text which have been tested and proven to be more representative than manually derived ones. Yang and Chao (2018) designed keyword-based sentiment analysis using annotations. This approach increases the information quality of the original review texts.

Jin Ma and Lee (2014) revealed that review manipulations largely affect consumer trust. Peng *et al.* (2016) tested consumer-knowledge on review manipulations by sellers. It finds that, consumers are aware of manipulation tactics to some extent, and this sometimes creates disinterest in reviews.

Yagci and Das, 2018 investigated design-level information quality measure (DLIQ) with regards to product design, using the content, complexity and relevance of the reviews. This measure can set thresholds, based on which designers can conduct investigation into design features (to identify product defects and failures). Banerjee and Chua (2014) designed a theoretical framework that can separate authentic reviews from manipulative reviews. The framework uses the matrices: comprehensibility, informativeness and writing style. The results indicate that authentic reviews are usually longer than the manipulative. It also identifies authentic reviews as more readable than manipulative reviews as well as more informative than manipulative reviews. Finally, the findings indicate that authentic reviews contain more question marks and fewer exclamation marks compared to manipulative ones. These results have been supported by Baker and Kim (2019), which reveals that consumers use complex language and emotions in exaggerated reviews.

Perez-Aranda *et al.* (2018) realized that hoteliers choose hotels based on commitment and competence rather than online reviews. In contrast, Yule-Kim (2019) opined that femininity and risk are positively associated with consumers' reliance on online review ratings. Their study shows that women rely more on reviews from online hotel ticket-sale platforms than men. They are also risk averse than men.

4.3. Consumer Reference

Consumer reference has been established as another important process in information review. The studies can be categorized into positive and negative reviews (Fu *et al.*, 2015; Xu, 2018), recommender systems (Kim *et al.*, 2009; Baum and Spann, 2014; Xu and Yao, 2015; Luan *et al.*, 2018) and friend vis-a-vis the crowd (Lee and Ma, 2012; Pan *et al.*, 2018).

Lee and Ma, (2012) averred that information gained through online reviews is useful in reducing uncertainty associated with online shopping. Pan *et al.* (2018) studied the influence of friend's review on a consumer as against review by others. The finding is very relevant as it clarifies that although the crowd form the larger population, friends have more influence because of their proximity to the consumer.

Fu *et al.* (2015) averred that consumers who have a high interest in eWOM communications usually post positive online reviews whilst the others are driven by peers. Xu (2018) also realized that the influence of the reviews on the consumer may not necessarily be their basis of measuring satisfaction. In essence, consumers think beyond how positive or negative the reviews are to personal experience.

According to Kim *et al.* (2009), recommender systems are effective where there is a limited volume of evaluation data from general users. Providing online consumer reviews does not always benefit an online retailer, as inconsistent recommendations do negatively influence consumers' purchase decisions (Baum and Spann, 2014). Information credibility and quantity does influence the consumer product-review interest (Xu and Yao, 2015; Luan *et al.*, 2018).

4.4. Ranking of Reviews

Chen *et al.* (2017) designed a Bayesian inference model which can simulate the formation of consumers' perceptions with the goal of getting honest reviews. The study found that, the onus to create an honest system lies on the platform owner, since consumer perception about the seller is influenced by both honesty and quantity of the reviews. To improve on the existing system, Saumya *et al.* (2018) designed a system that uses random-forest classifier to classify

reviews into either low or high quality. The system provides fair review placement on review listing pages and makes all high-quality reviews visible to customers on the top. Their experiment showed that inclusion of features from product description data and customer question-answer data improves the prediction accuracy of the helpfulness score.

Lee *et al.* (2019) building on the earlier system, added new features in a novel unified learning-approach for ranking products based on online product reviews. This approach enables effective capture of the underlying features of online product reviews in a hierarchical order. 'The use of hierarchical networks in product ranking makes it possible to utilize multilevel features and improves the ranking performance' (Lee *et al.*, 2019).

5. Discussion and Conclusion

The content analyses present some important highlights which are discussed in this section in accordance with the themes used in the last section. The discussions elaborate on the importance of these highlights to online information.

Firstly, the findings on usefulness of reviews present proposed solutions on multilingual reviews, trimming of review volumes, synchronizing reviews into purchase experience and the expertise of the reviewer. Review helpfulness prediction as investigated in Zhang and Lin (2018) deals with multi-languages generated from different platforms. There is a research gap with respect to creating platforms for reviewers to use different languages within a single platform. For instance, a restaurant's review system could make provision for reviews in English language, Chinese language, French and Spanish to afford consumers the opportunity to use their native language to express themselves. This could be a review-motivation mechanism as emphasized in Chen (2016) and also a means to reducing dishonest reviews. The findings of Cui *et al.* (2012) which basically identifies volumes and valence of reviews to correlate for some time and begin to diminish could also be as a result of a disparity between the reviews and consumer-purchase experience. It is therefore imperative for sellers to create systems that can sort exaggerated reviews as proposed in Baker and Kim (2019). There could be further studies into this phenomenon to have a mix between reviews and actual purchase-experience.

The annotation design in Yang and Chao (2018) provides a summary for the review sentences using specific keywords. This keyword-based sentiment analysis, although reduces the volume of reviews, could have its flaws in the form of wrong interpretation or incomplete feedback. There could be more trials to ameliorate this challenge to avoid mistrust in reviews as shown by some respondents in (Jin Ma and Lee, 2014; Peng *et al.*, 2016). The DLIQ measure in Yagci and Das (2018) is a good approach for design-level information quality measure (DLIQ) in product design but their test was limited to only 10 varied products. The product also sets benchmarks with product reviews which must have the same number of reviews. With these difficulties known, two problems arise: how to measure reviews of multiple products that have a high disparity in the number of reviews and the ability of the DLIQ to measure design quality for more varied products (e.g. 20 or 30 products). This is a research gap which would demand more tests of the product in future research to enhance knowledge in product review information.

Next, the challenges with 'friends vs. crowd' (Pan *et al.*, 2018) and a general need for more interest in reviews by netizens create an important platform for online information. It is practically impossible to avoid peer pressure in communication. Perhaps, the focus could be on making the crowd's review information visible. One way to do that is the finding of Xu (2018) that, online review alone is incapable of attracting purchasers or users unless there is a commensurate actual purchaser-satisfaction or user-satisfaction. Online information managers should therefore initiate more user-service benefits which could include reduced cost for popular users. Lee and Ma (2012) found that consumer attitudes towards reviews are influenced by both benefits and costs.

Chen *et al.* (2017) proposed that to instill trust in consumer feedback and reduce dishonest reviews, rebates from sellers for reviewers with more reviews, should be banned. They also recommended that reviewers should not be permitted to modify their reviews after submission. These are consistent with the findings of Saumya *et al.* (2018) that the inclusion of new features in the design of review systems can add to the reliability of the data. Further studies into the product ranking model by Lee *et al.* (2019) to employ a multi-task method of learning product rankings and review ratings is vital to creating these new features.

5.1. Conclusion

This literature review entails detailed content analyses of the findings and methodologies found in 64 SSCI/SCI peer-reviewed papers covering online information review only. The findings, as presented earlier, indicate a general effort of the extant literature to solve problems related to multilingual reviews, manipulations and dishonesty in reviews, review-motivation mechanism, peer-influence in reviews information, trust in consumer feedback and review usefulness.

Based on the analyses, the authors make recommendations for future research to address the existing research gaps.

6. Limitations and Future Research

This study has some few limitations. First, although online information research spans for at least two decades, this study, for the purpose of focused content analyses, was confined to this last decade. Although this approach presents the most current findings, it may also miss out on some important findings in early research. The advantage however is that, since the current research is built on early research, it suffices that, significant part of the early research is covered in this decade's research. Next, the publications (64 peer-reviewed) were sampled from specific sources (SCI/SSCI) with majority being Emerald-published journals and a good percentage from Electronic Commerce Research and Applications as well as International Journal of Electronic Commerce. There may be other quality papers from other journals which were not covered. However, the sources of the sampled papers are proven to be high-quality and rigorously peer-reviewed, addressing online information in specific. This review therefore represents the science to a significant extent.

From the analyses, the following areas need further studies:

- How to create multilingual online review and recommender systems for a single review platform. The relevance to information system is that consumers/users of different nationalities can easily give honest reviews with convenience.
- Reward mechanisms and other motivations for consumer/user online reviews. The relevance of this is to develop the findings of Fu *et al.* (2018) which makes the case for the need to increase the interest of consumers in eWOM communications.
- How to sort expert reviews from the crowd. This will give the feedback-user a more comprehensive understanding of the reviewers, having known their context of reviewing.
- Creating new features that will disallow review modification after submission. This will reduce review manipulations to some extent.

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