

A MODEL OF ARGUMENT QUALITY FOR INFORMATION ADOPTION IN
E-COMMERCE REVIEW PLATFORM

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DEDICATION

This thesis is especially dedicated to my parents, who taught me on gaining experiences by learning through knowledge and never easy to give up, as largest task could be completed, if it is done one step at a time.

It is also dedicated to my beloved husband who gives his best understanding through my research journey and to my lovely daughters, Nur Imanyna Syaffiya and Nur Ieasha Shaziya.

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ABSTRACT

The viral nature the content of the Web has transformed the landscape of e-Commerce review platforms to be in a state of constant growth. Similarly, the prominent features of these platforms have been recognized to be among the dominant factors in shaping online consumer behavior. Nonetheless, in this regard, if the review platform returns too many reviews, and the reviews are presented in non-relevant manner, in which this may be cumbersome and time-consuming for consumers. Therefore, identifying credible reviews that contain valuable information has becomes increasingly important for online businesses. The main research question to be addressed in this study is to determine on how can a model be developed to improve the argument quality perceptions in the adoption of online reviews across e-Commerce review platform. Subsequently, the main objective to be achieved is to develop a model of argument quality for review's adoption in the e-Commerce review platform. The potential effects of consumer relevance judgment from information retrieval perspective have been considered, which include perceived informative and affective relevance in developing the research model by using Elaboration Likelihood Model (ELM). A quantitative research method has been applied to test and validate the propose research model. The response data from 238 valid respondents was analyzed using the Partial Least Square Structural Modelling (PLS-SEM) technique. The findings from the results indicate that content novelty, content topicality, content similarity, content tangibility and content sentimentality could positively influence the perception of argument quality which lead to information adoption behavior. Finally, the importance of information relevancy was also highlighted in this study, which reveals some appropriate features that can be utilized by e-Commerce practitioners to better refine their information search criteria in the online review platforms.

ABSTRAK

Sifat viral kandungan Web telah mengubah landskap platform maklum balas pengguna dalam talian e-Dagang untuk berada dalam keadaan perkembangan yang berterusan. Selain itu, ciri-ciri penting platform ini telah diakui sebagai salah satu faktor dominan dalam mempengaruhi tingkah laku pengguna dalam talian. Walau bagaimanapun, dalam hal ini, sekiranya maklum balas pengguna dalam platform ini diterima dalam kuantiti yang terlalu banyak dan ulasan yang dibahaskan dipaparkan secara tidak relevan, ia mungkin membebankan dan memakan masa untuk pengguna. Oleh itu, dalam usaha untuk memahami faktor penerimaan pengguna dalam talian terhadap maklum balas yang diterima, adalah penting untuk mengenal pasti maklum balas yang boleh dipercayai dan mengandungi maklumat yang berguna. Kajian utama penyelidikan ini adalah untuk membina model yang dapat meningkatkan persepsi terhadap kualiti maklumat di dalam ulasan dalam talian di platform maklum balas e-Dagang. Objektif utama yang perlu dicapai adalah untuk membina model berkenaan maklum balas yang berkualiti untuk menggalakkan penerimaan maklumat oleh pengguna dalam talian e-Dagang. Kesan potensi dari perspektif pengadilan yang relevan daripada pengguna telah dipertimbangkan yang merangkumi perkaitan yang bermaklumat dan afektif dalam proses membangunkan model penyelidikan untuk kajian ini yang mengaplikasikan Model Kemungkinan Penjelasan (ELM). Kaedah penyelidikan kuantitatif telah digunakan untuk menguji dan mengesahkan cadangan model penyelidikan ini. Data maklum balas daripada 238 responden yang sah dianalisa menggunakan teknik Pemodelan Struktur Secara Minimum Separa (PLS-SEM). Hasil kajian menunjukkan bahawa, maklum balas yang novel, bertopik, mempunyai ciri persamaan, mempunyai ciri yang ketara dan bersentimen, boleh mempengaruhi persepsi terhadap maklum balas yang berkualiti, yang menjurus kepada penerimaan maklumat yang berkesan. Akhirnya, kepentingan perkaitan maklumat turut diserlahkan dalam kajian ini, yang menunjukkan beberapa ciri sesuai yang boleh digunakan oleh pengamal e-Dagang untuk menambah baik ciri-ciri carian maklumat dalam platform maklum balas dalam talian.

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LIST OF ABBREVIATIONS

e-Commerce	-	Electronic Commerce
ROI	-	Return on Investment
e-WOM	-	Electronic Word of Mouth
IPMA	-	Importance-Performance Matrix Analysis
US Online Review	-	United States Online Review
ELM	-	Elaboration Likelihood Model
IAM	-	Information Adoption Model
IR	-	Information Retrieval
IV	-	Independent Variable
DV	-	Dependent Variable
PLS-SEM	-	Partial Least Squares Structural Equation Modelling
IS	-	Information Systems
CVI	-	Content Validity Index
AVE	-	Average Variance Extracted
VIF	-	Variance Inflation Factor

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CHAPTER 1

INTRODUCTION

1.1 Overview

Despite the futuristic advances of retail mega-giant Amazon.com through the launch of drone services and the establishment of the standard two-hour delivery, the company is still planning for long-term success by exploring the market opportunities and potential points of friction with regards to approaching online shoppers. According to the Think survey by Google, modern e-Commerce needs to identify the importance of micro-moments during a shopper's transactions. These include the assistance required in the moment of a consumer purchase's decision, the decisions to solve the problems in the right way, the pursuit of big goals during downtime and assisting in decision making during a routine moment. These points are assumed available by providing the right information content for consumer's needs. Great information content is supposed to be helpful, educated and entertaining as well. In terms of the marketing strategy, a high quality information content is believed to be cost effective and impactful to ROI (Smith, K., January 2018). Not to mention, brands that count on content from review platforms save over \$14 on each new acquired customer (McMillen, J., February 2016).

The design of an online review platform has received considerable attention amongst e-marketing experts as it enables much more credible and reliable information exchange (S. Hussain et al., 2018). According to Reevoo statistics, the 4.6% increase in business conversion rates was achieved by 50 or more reviews per product and the content of the reviews could produce an average uplift of 18% in product sales. Likewise, nearly 93% of online consumers will tend to search for reviews to read about business information before making a purchase decision (Kaemingk, D., April 2019) and by reviewing

sites which had the epicenter term “near me” searches for about one in eight consumers (Capoccia, C., April 2018).

Online consumer reviews, a form of electronic word of mouth (e-WOM), can be referred to as any judgment and evaluation posted by former consumer to describe about the product, the services or the brand on the website. The convenience of online reviews allows a consumer to make an alternative comparison adjusting to their need after the information seeking process. The resulting influence of this situation can lead to a shift in the consumer’s purchase behavior, starting from the way they search for business’s information to the way they make a decision evaluation. These information roles were well established to reach beyond any other marketing strategy and advertising campaign (Breazeale, 2009; Maxham & Netemeyer, 2002). According to the Review Trackers (2018), information received from online reviews have a major influence in convincing consumers to either avoid or to keep engaging with a particular business. Moreover, the features associated with online reviews were proven able to shape the brand’s perceptions amongst potential consumers (Tsao & Hsieh, 2015). In fact, information provided in the reviews from a regular consumer was assumed more trustworthy, as compared to a celebrity endorsement or an expert’s recommendations (Lu et al., 2014).

Realizing the importance of this review, modern businesses are increasingly enabling consumers to leave a helpful vote for each review as an attempt to gain a much more positive reputation amongst potential consumers. The voting mechanism can be represented as a quality assessment about the content’s arguments, and thus help the business in measuring the characteristics of each of the review received. Research has established the power of online reviews in predicting the product sales and return in profits from various product categories such as books, restaurants, movies and hotels (e.g. Chevalier & Mayzlin, 2006; Clemons, Gao, & Hitt, 2006; Cui, Lui, & Guo, 2012; Duan, Bin, & Whinston, 2008). According to Xu, X. (2019), various attributes in online reviews will have different influences on the consumer’s perceptions. The degree of this influence depends on both the independent consumer’s focus and the properties of these attributes themselves. Hence, different perceptions for each product’s attributes will be generated. In general, different

consumer segments will require different specific features to enable the process of information adoption. According to Filieri, Hofacker & Alguezai (2018), online businesses should consider refining their information search criteria, to better facilitate the consumer's retrieval of information, which is relevant to their needs. Thereby, an increased knowledge on the informational influences of online reviews are assumed to be crucial, as this might help online businesses to better understand the way different quality dimensions are adopted in addressing the various needs of online decision making.

1.2 Background of the Problem

Much research has been conducted to examine the determinants of perceived information quality to explain online consumer behavior. However, the results from previous research have shown inconsistent conclusions as to how this quality assessment could affect the adoption of online reviews (Hong et al., 2017 and Zhang et al., 2014). These inconsistencies might take place because previous studies tend to focus their investigations on the single outcome of argument quality. For example, Bhattacharjee and Stanford (2006) examined argument quality by evaluating the persuasive strength of the argument embedded in the online reviews. Meanwhile, another line of studies by Zhang & Watts (2008), proposed a slightly different approach, which focused on argument quality from the characteristics of messages (Zhang & Watts, 2008). On the other hand, the studies to operationalize the actual factors that represent the persuasive argument of online reviews are still limited (Kim & Benbasat, 2006). Persuasive argument of online reviews is referred to as the consumer's ability in evaluating the motivational cues of information content. Likewise, the existing conception of argument quality might not be able to capture the perceptions from both experienced and inexperienced users in the e-Commerce review platform. Thus, Zhang et al., (2014) argued that, the argument quality should be seen as multidimensional construct rather than unidimensional. Subsequently, they have proposed perceived informativeness and perceived persuasiveness as two dimensions in representing the concept of argument quality. Moreover, previous studies by Tam & Ho (2005) stated that, online consumers

would consider a few informational and persuasive information cues during argument evaluation to gain the specific conclusions. To this end, we expect that, the high argument quality across online reviews should be designed with both informative and persuasive information cues.

Although the existing studies were useful in understanding the concept of argument quality, they have mainly investigated the ‘visible’ aspect of argument quality, which focused on the objective elements, such as the review polarity, review length and reviewer information (Chua & Banerjee, 2016 and Mudambi & Schuff, 2010). The importance of subjective measurements of argument quality in accessing the levels of information adoption still received very little attention (Filiari, Hofacker & Alguezaui, 2018). According to Chen et al., (2014), the previous measurement of argument quality may not be related to or not practical in evaluating the value of subjective features of the content information. Subjective measurements can be represented by the relationship between personal preferences and decision characteristics. In the meantime, Watts et al., (2009) stated that, information relevance is the most salient subjective qualities as the level of relevancy generally depends on the decision it is being applied to. On the other hand, the degree of interpersonal influence for the individual may be differ for each of the reviews (Zafiroopoulos, 2012). Hence, the nature of information relevance is worth to be explored in delivering the most valuable clues in the online review platform (Filiari, Hofacker & Alguezaui, 2018).

Empirical evidence from the previous studies have shown that, information overload has become one of the most pressing issues for the review readers in almost any of online review platform (Chen, Shang & Kao, 2009). However, the investigation on the effects of information relevance in this context are particularly scant (Chen, Shang & Li, 2014). Besides that, Park & Lee, (2009) contended that, the abundance of reviews available from anonymous reviewers make it difficult for online readers to identify the most relevant information and honest opinions about the product. This situation could generate the negative effect from the decreasing perceptions, or the review’s informativeness (Chen & Tseng, 2011). Likewise, these variations may lower consumer trust, as it becomes much harder for the web users to make inferences about the product performances. Moreover, Liu & Park (2015)

stated that, it is important to recognize the consumer's difficulties, to process and judge the most relevant information towards their needs.

Of particular interest to the studies about the relevance judgment during an information search, the empirical results provided statistical evidence, which stated that, informative and affective or motivational relevance are tightly correlated. Here, the understanding of information search behavior and perception of argument quality can be concluded by including the perceived relevance of online reviews into the existing paradigm of online decision-making. The concept of information relevance Xu, Y. (2007) is adapted to merge the subjective measurement of argument quality and the degree of the review's influence. Cheung et al., (2012) added that, the knowledge on the influential factors associated with argument quality remains scant, especially from the theoretical perspective. Therefore, the lack of studies in these areas need to be addressed by further investigations to understand information adoption behavior amongst online consumers. Additionally, quantitative analysis on the textual elements of online reviews is assumed to provide the broader explanation on the concept of argument quality studies in the e-Commerce review platform.

1.3 Problem Statement and Research Questions

Despite the growth of investigations related to argument quality studies in the online review platform, there exist literature inconsistencies on the concept of argument quality. Likewise, most scholars viewed argument quality as the unidimensional constructs instead of multidimensional ones (Zhang et al., 2014). As online reviews were narrated with the objective product descriptions and could be embedded with the strength of persuasive arguments from subjective perceptions of online consumers, this study assumed that, argument quality should be designed with both informative and motivational cues. Nevertheless, to this end, there still limited number of investigations that can provide the necessary theoretical explanation related to this concept to explain the adoption behavior of online consumers in the research model. Additionally, there are still insufficient

evaluations on the subjective measurements to capture the concept of argument quality. Prior studies proved that, information relevance can be used as one of the most important factors in explaining consumer's information adoption behavior, but to our knowledge, very few scholars applied this dimension to represent argument quality perceptions, as well as to explain the consumer's behavior intention. Consequently, further investigations are needed to present the comprehensive solution for argument quality perceptions through the development of the research model. The adoption of IS theories can be made in this research model to test on the relationships of the proposed constructs. Limited studies to test the multidimensional constructs of argument quality and lack of knowledge on the influence of subjective measurements towards consumer's information adoption behavior are the main identified problems that this study seeks to address. Based on this concern, the main research questions for this study are:

“How can a model be developed to improve the argument quality perceptions in the adoption of online reviews across e-Commerce review platforms?”

In order to respond to the main research question, the following research questions need to be addressed:

- i) What are the factors, which influence argument quality perceptions in the e-Commerce review platform?
- ii) How to develop a model of argument quality for review's adoption in the e-Commerce review platform?
- iii) How to validate the model of argument quality for online review's adoption in the e-Commerce review platform?

1.4 Research Objectives

The overall objective of this study is to identify the most influential factors of the argument quality, to explain the consumer's information adoption behavior in the e-Commerce review platform. To achieve this, the following three research objectives should be achieved:

- i) To investigate the factors that influence argument quality perceptions in the e-Commerce review platform.
- ii) To develop a model of argument quality for review's adoption in the e-Commerce review platform based on the identified factors.
- iii) To validate the model of argument quality that has been developed for online review's adoption in the e-Commerce review platform.

1.5 Theoretical Framework

This study used Information Adoption Model (IAM) as designed by Sussman et al., (2003) to explain how online consumer adopt information and hence change their behaviors in the e-Commerce review platform. IAM is based on dual-process theory of informational influence which known as Elaboration Likelihood Model (ELM). According to the theory's designers, Petty and Cacioppo, (1980), ELM is useful to understand how receivers are affected by the information within the message and thus can be used to explain the change of attitudes form and the process that underlying the effectiveness of persuasive communication. There are two major routes proposed in ELM model for persuasion, which are the central and peripheral route.

Under the central route, informational influence is occur when the individual has a careful and deep consideration on the information (Lowry et al., 2012). Contrarily, if the individual has only a little consideration on the information, a low

level of elaboration will be obtained, hence the informational influence is assumed to be under the peripheral route (Petty and Brinol, 2015). Generally, the information cues received under the peripheral route is identified to be unrelated to the logical quality of the stimulus such as source credibility or source attractiveness of the message. Thus, Sussman et al., (2003) have proposed argument quality as the central route and source credibility as the peripheral route to understand the process of information adoption.

IAM based on ELM theory was chosen in this study because it provides an approach to visualize and analyse the systems related problems and the solution opportunities. Since this study, aims to understand information adoption in the computer-mediated communication platform, the elements from this theory, argument quality and source credibility need to be implemented. However, the focuses of this study is explores the process of information persuasion based on quality measurement of online reviews, thus, source credibility is excluded from the study context. The results of the study will be based on informational influence of online consumer based on argument quality perceptions in adopting information in the e-Commerce review platform.

1.6 Scope of Study

In general, this study acknowledges that, the consumer's review platform can be enhanced through many ways. Nevertheless, this study is interested to explore the relationship between subjective measures of argument quality and information adoption behavior to enhance information filter in the e-Commerce review platform. In addition, this study applies the concept of information relevance judgments to develop a theoretical model for argument quality that will contribute to the consumer's adoption of online reviews. The proposed research model is further evaluated by conducting a survey to capture consumer's relevance judgments about information quality across online review platforms. The respondents are restricted by the frequency of purchasers from the e-Commerce websites, and having a good exposure in reading text recommendations specific to a product reviews. Control

check is important in order to select the most appropriate respondents for data collection and analysis purposes. Focus of this study is to comprehend consumer relevant judgments of information quality and their intention in adopting online reviews. This will further assist in developing a better structure of information filter for e-Commerce review platform.

1.7 Operational Definitions

Table 1.1 explain the operational definition for information adoption and argument quality perception as the dependent variables for this study. The operational definition is needed as the fundamental when collecting all types of data for the study. It is particularly important when to make a decision about whether something is correct or incorrect, or when to visual check for some appeared confusion.

Table 1.1 Operational Definitions

Criteria	Attributes	
Characteristics of Interest (DV)	Information Adoption	Argument Quality
Definition of Characteristics of Interest (DV)	The willingness of message receivers in adopting information (Fu, Ju & Hsu, 2015)	Individual's perception about the strength of argumentation in the received message (Cheung, Sia & Kuan, 2012)
Measuring Instrument (Conceptual Variables)	a) Review Helpfulness b) Argument Quality	a) Perceived Informative Relevance b) Perceived Affective Relevance
Scales of Measurement	To assess level of information adoption on an ordinal scale (1-5 scale), based on user's perception of argument quality. Ordinal scale: 1- Strongly disagree 5- Strongly Agree	To assess level of argument quality perception on an ordinal scale (1-5 scale), based on user's agreement of informative and affective relevance judgment of information Ordinal scale: 1- Strongly disagree 5- Strongly Agree

Criteria	Attributes	
Decision Criteria	Strong perception of argument quality will contribute to online review adoption in e-Commerce review platform	Strong agreement on perceived informative relevance and perceived affective relevance of information will strongly influence argument quality perception in e-Commerce review platform

1.8 Research Assumptions

Table 1.2 list all the assumptions used for this study. Assumptions are things that will be accepted as true or at least reasonable, provided by the researchers to all the readers that will read the thesis. This is to ensure that, any scholar that read the thesis will likely to assume that certain aspects of this study is true given by the population, statistical test, research design or any other delimitations.

Table 1.2 Operational Definitions

Attributes	Assumptions
Inconsistent conclusions as to how argument quality affect the adoption of online reviews (Hong et al., 2017)	This study assumed that, further research needed to conclude on how argument quality will have positive influence towards the adoption of online reviews.
Previous results from existing research studies tend to focus the investigations on the single outcome of argument quality (Zhang et al., 2014).	This study assumed that, the investigation should be focused on multidimensional outcome of argument quality.
Study by Tam & Ho (2005) stated that, online consumers would consider a few informational and persuasive cues during argument evaluation to gain specific conclusions	This study assumed that, strong argument quality can be obtained from both informational and persuasive cues in online reviews.

Attributes	Assumptions
Watts et al., (2009) stated that, information relevancy is the most salient subjective qualities as the level of relevancy generally depends on the decision it is being applied to.	This study assumed that, information relevance is one of the most important subjective qualities to improve argument quality perceptions.
During an information search, the empirical results provided statistical evidence, shown that, informative relevance and affective relevance are tightly correlated (Xu, Y. 2007)	This study assumed that, the combination of informative and affective relevance can be tested to the subjective qualities of online reviews and hence, improve consumer adoption of information during their information searching process in the e-Commerce review platform.

1.9 Significance of Research

This study is assumed to contribute to the development of knowledge in several ways. First, the development of a comprehensive research model will provide an in-depth understanding on the factors, which influence consumer adoption of online reviews across e-Commerce websites. This study has been able to conceptualize about argument quality perceptions from previous literatures. The expanded model is designed based on the previous concept of argument quality and taking the views of consumer's relevant judgments from information retrieval perspectives. By applying the Information Adoption Model (IAM) and dual-process theory (ELM), with the implement concept of consumer relevance judgments from information retrieval perspectives, a model is proposed, which consist of seven factors with two main dimensions.

Under the dimension of perceived informative relevance, four factors have been considered which include content novelty, content topicality, content similarity and content reliability. In the dimension of the perceived affective relevance, three factors have been considered, which include content tangibility, content sentimentality and content readability. The empirical result shown that, five

out of seven proposed factors have the significant and positive impact on argument quality perceptions that expected to promote information adoption in the e-Commerce review platform.

On the other hand, this study can provide an insight into the nature of review's adoption to the online consumer's eyes. The importance of information relevance perceptions have emerged in this study, which suggest that, e-Commerce practitioners should refine their information filter criteria, to better facilitate consumer's retrieval of online reviews that they desire for. This might be due to the reason that, different consumer segments will require specific features or services. The assumption is that, each consumer group will search for reviews that are more likely to satisfy their information needs. Therefore, based on the outcome of this study, online businesses will be able to learn on how to enhance the design of their review platform by considering features that can be developed according to the proposed factors. By doing so, the e-Commerce organization could increase the adoption of online reviews, which they host. The study's findings also imply that, online businesses should consider adopting a wider range of informative and motivational cues in order to ease consumer's product and service evaluation and ultimately their decision-making.

1.10 Organization of the Thesis

The thesis is organized and presented in six chapters. This section provides an overview on the structure of this thesis:

Chapter 1: Introduction. This chapter provides an overview on the background of this study area, highlighting the background of research problem and presents the research statements together with the research objectives that need to be answered. The research scope and its significance is also discussed.

Chapter 2: Literature Review. This chapter provides an extensive review analysis on the e-Commerce review platform. This part provides an in-depth understanding

on the concept of delivering information credibility perceptions amongst online consumers. The related theories and models were also reviewed in visualizing the proposed research constructs, and hence developing a conceptual model for this study

Chapter 3: Research Methodology. This chapter discusses the research methodology used to conduct this study. Discussions on the research paradigm and the design of the research framework help to explain all the phases, which comprise this study. Next, an explanation on the analysis techniques is provided. The process involves in developing the required survey instruments which are also listed in this chapter.

Chapter 4: Model Development and Instrument Validation. This chapter describes the development and validation process of the survey's instruments. The proposed research constructs for the study are discussed in detail, with the related definitions and sources mentioned. The chapter continues to discuss the development of the research model and the proposed relationship of the research hypotheses. The development of the survey instrument in confirming the research constructs is presented followed with the discussions on the results of the pilot study.

Chapter 5: Data Analysis and Model Validation. This chapter describes the data collection and data analysis process for this study. The assessment of measurements and structural models using PLS-SEM is presented, followed by the results of IPMA tests to showcase the important factors from the research model.

Chapter 6: Conclusions and Implications. This chapter provides the study's findings and research achievements from both the theoretical and practical point of views. Furthermore, a recommendation guideline for the future development of a review platform is listed, followed by the acknowledgment of the study's limitations and suggestions for future research works.

1.11 Chapter Summary

This chapter presents an overview and background of the study domain. The chapter started with the discussion on the background of the problem and highlights the literatures, which need to be filled. The related background about information quality issues in computer-mediated communication platform was explained which have been used as the foundation of the research problem formulation for this study. Subsequently, the research questions were then being formulated, followed by the research objectives that need to be achieved to answer those stated research questions. After that, the next section is continue with the explanation on the theoretical framework, which described the applied of IAM, and ELM theories as the main framework to visualize the variables used in this study.

The chapter continue with, discussion on the scope of the study, and follow by the operational definition to explain on argument quality perceptions and information adoption behavior as the dependent variables for this study. The next section is described about the research assumptions of the study. This chapter ends with the sections that highlight the significance of this research and the organization of all the chapters included in the thesis. The next chapter comprise of an extensive review analysis on the foundation of the current study, with those relevant studies in the related field. Chapter 2 also will continue to explain about the literature background on the extraction of main variables used for this study and how the relationship between variables is develop to obtain the research result.

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