How to Evaluate the Helpfulness of Product Review

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Abstract: In recent years, online product reviews have become important both for online consumers as well as online retailers. However, bad comments on product quality can often cause incomprehension of comments (the customers) to readers. The purpose of this article is to automatically predict the usefulness of reviews. This paper analyzes the features embedded in product assessments in nine different product types and explores their effects on the utility of assessments. In addition, the researcher used the RapidMiner application to analyze the data. Four data mining methods were examined to determine the one that best predicts the utility of the evaluation for each product type using nine evaluation data bases obtained from Amazon.com. The results show that the evaluations for different types of products have linguistic characteristics and the disposition of the characters is the hierarchy of the data. The results also indicate that the method used to collect users' opinions before putting products on the market gives a progressive result not only for the companies through their profit but also for online customers who can directly obtain the products they are looking for. The study helps to improve the effective use of online reviews.

Keywords: product reviews, helpfulness, language, hierarchical framework, online reviews, consumers, product, product features

1. Introduction

In recent years, online product reviews have become important both for online consumers as well as online retailers. On one hand, online product reviews represent an important source of information to consumers who base their purchase decisions on reviews provided by websites like amazon.com, Alibaba.com, Tryandreview.com, so on. On the other hand, online product reviews are an important asset for online retailers since they attract online consumers who may also buy the related products. Online product reviews have become valuable resources to help consumers in assessing the products, to support manufacturers in comprehending consumer opinions, and to help retailers in enhancing consumer loyalty. However, the high variation in quality has brought challenges to knowledge acquisition. Although many websites allow consumers to vote for the helpfulness, the approach limitations in its efficacy because many websites do not provide this voting function and most reviews receive very few votes. Various factors (e.g. review length and readability) have been explored to review helpfulness assessment; however, most of them have focused on the study superficial characteristics of review text while ignoring its deep-level semantics. This paper aims to propose a hierarchical framework and linguistics (the value of language) to show how to evaluate the helpfulness of product review. The objectives to be achieved are: first, in-depth a detailed study on the helpfulness of the sale and the buy of online products review; second, facilitate customers looking for the exact products they need to find online; third, demonstrate the advantages and disadvantages of online products.

However, as the reviews accumulate, it becomes almost impossible for customers to read all of them; furthermore, poorly authored low-quality reviews can even cause inconvenience. Thus, it becomes important for e-business companies to identify helpful reviews and selectively present them to their customers.

In fact, customers often require only a small set of helpful reviews. Some online vendors provide mechanisms to identify reviews that customers perceive as most helpful. The most widely applied method is simply asking review readers to vote on the question: “Was this review helpful to you?”, “What is your opinion about this product?”, (They comment on its design, color…), so on. The answer can be either “Yes” or “No” or a sentence. Then, review helpfulness is evaluated by calculating the number of helpful votes divided by the total number of votes (RH = \frac{H}{N}).

Thereafter, the reviews that receive the highest ratings are reorganized to the top of the web page so that customers can easily check them. Leading online retailers—such as Amazon.com and TripAdvisor—also use this method to measure review helpfulness. Figure 1 shows how Amazon.com gathers helpful votes of the reviews from their readers.

However, a large proportion of online reviews have few or no votes at all; thus, it is hard to identify their helpfulness. According to Yang et al. more than 80% of the reviews in the Amazon review dataset have fewer than five votes. Moreover, newly authored reviews and less well-known products have less opportunities to be read by other customers, and thus, cannot receive many votes. Therefore, to use the entire review dataset efficiently, it is necessary to estimate the helpfulness of online reviews by using an automatic system rather than depending entirely on the manual helpfulness voting system.
It makes multifold contributions: first, a hybrid bottom-up method is developed for the construction of product feature hierarchy, and a hierarchical framework is created to help understand review helpfulness; second, drawing on the hierarchical framework and product uncertainty and information quality theories, we propose a research model that consists of four novel main factors – breadth, depth, redundancy and Language.

Last, we test our model with both experience goods and search goods, which demonstrates the generality of our approach. In addition, our framework and model offer new lens for explaining mixed findings about impacts of review length and rating on review helpfulness.

We conduct experiments with online reviews of different types of products to test the proposed techniques and research model. The findings provide strong evidence for the importance of the hierarchical framework for improving our understanding of review helpfulness. This research provides several implications. First, this paper applies and extends the product uncertainty and information quality theories to the domain of online product reviews; which guides the design of factors for explaining review helpfulness. Second, the paper operationalizes the factors by constructing a hierarchy, which provides a showcase on how to utilize semantic relations among product features to gain deep insights into online reviews.

To address these research questions, the different online datasets from different product types (Banna21, CanonEOSR80D, KodakPIXPRO, CanonPowerShotELPH, FujifilmXP10, NikonD3400, KodakPIXPRO, PolaroidPOP, SonyDSCW830, SonyW800S2.1) on Amazon.com are used. The linguistic and hierarchical characteristics of online reviews for each product type are extracted by using a widely adopted text analysis software, Linguistic Inquiry and Word Count (LIWC). Next, the determinant factors of review helpfulness for each product type are examined using regression analysis. Finally, instead of depending on a single analytical method by RapidMining, the studied data mining methods.

2. Literature Review

This section presents my plan for achieving the objectives discussed in the previous section. The sale of the product online is a recent science, which is why it must be consistently improved. Searching for a product online is usually done using the name of the specific product. In the field of the science of language synonyms exist in almost every name. For this purpose, it will have to ask itself the question of, if the customer write a name only can help him to find the product, they are looking for or not? To know that most of these products need precision or detail, otherwise the online search may take several minutes to get what the customers are looking for. That's why the paper will study the different processes to easily find the product that the customers need. Each customer has his/her own experience on finding products online.

Extraction of product characteristics can be considered as a sub-category of information extraction, which has been studied for a long time in the community of automatic language processing. In the general information extraction, some research aims to improve the performance by incorporating new techniques, another trend is focused on the extraction of named entities such as names of people, organizations, places, expressions of time, and quantities. Information mining research provides the foundation that has been used to extract product characteristics.

The other paradigm of feature extraction methods is rule based, which uses rules derived from uncovered patterns. DP is a state-of-the-art rule-based semi supervised method for extracting noun phrase-based features (Qiu et al. 2011). DP is based on the dependency relation between product features and opinion words.

2.1 A Multi-Dimensional Schema of online review assessment

Online consumer reviews increasingly exert influence on consumers’ purchase decisions when shopping online and give new importance to the concept of word-of-mouth. This is reflected in a growing body of academic literature across various disciplines that draw on online consumer reviews as the source of information. We conduct a systematic and interdisciplinary literature review to understand how online consumer reviews are used in the previous studies and what insights these studies offer.
An online review can be described as a reviewer expressing his/her opinions in text on target product(s). From the perspective of consumers, an online review can be characterized by three-dimensions: reviewer (writer), review (text), and product (target). Accordingly, we propose a three-dimensional schema of online review assessment, as shown in Figure 2.

Certainly, review helpfulness can also be manifested indirectly on marketing value such as product sales and price (Yu et al. 2012), and thus the latter is included in the related work. Therefore, the related studies can be organized by the online review schema (Fig. 2.), which are summarized in Table 1.

Table 1: A summary of dimensions and factors for explaining review helpfulness

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Factor</th>
<th>Target</th>
<th>Explanation and Sample Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>Product feature</td>
<td>Helpfulness</td>
<td>Number of product features (Kim et al. 2006; Liu et al. 2007)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Aggregation of product features (Archak et al. 2011)</td>
</tr>
<tr>
<td>Review</td>
<td>Review length</td>
<td>Helpfulness</td>
<td>Word counts (Chen and Tseng 2011; Kang and Zhou 2016; Mudambi and Schuff 2010; Peng et al. 2014)</td>
</tr>
<tr>
<td>Readability</td>
<td>Helpfulness</td>
<td></td>
<td>Easy to understand (Hu et al. 2012; Schindler and Bickart 2012)</td>
</tr>
<tr>
<td>Writing</td>
<td>Helpfulness</td>
<td></td>
<td>The use of inexpressive slang, the use of qualifications, repetition, humor, formal language, expressions of emotion (anxiety or angry), first-person pronouns (Li et al. 2013; Schindler and Bickart 2012)</td>
</tr>
<tr>
<td>Rating</td>
<td>Helpfulness</td>
<td></td>
<td>Star rating (Danescu-Niculescu-Mizil et al. 2009; Mudambi and Schuff 2010; Yin et al. 2016)</td>
</tr>
<tr>
<td></td>
<td>Sales/Price</td>
<td></td>
<td>Star rating (Chevalier and Mayzlin 2006; Clemons et al. 2006; Dellarocas et al. 2007; Geng et al. 2012)</td>
</tr>
<tr>
<td>Sentiment</td>
<td>Helpfulness</td>
<td></td>
<td>Emotions, sentiments (Ullah et al. 2016; Yin et al. 2014)</td>
</tr>
<tr>
<td>Review</td>
<td>Sales/Price</td>
<td></td>
<td>Quality of review, subjective or objective, sentiment (Chen et al. 2008; Hu et al. 2014; Yu et al. 2012)</td>
</tr>
<tr>
<td>Volume</td>
<td>Sales/Price</td>
<td></td>
<td>Number of reviews (Duan et al. 2008a; Geng et al. 2012)</td>
</tr>
<tr>
<td>Reviewer</td>
<td>Reputation</td>
<td>Helpfulness</td>
<td>Reviewer disclosure and reviewer history (Forman et al. 2008; Ghose and Ipeirotis 2011; Jensen et al. 2013; Weathers et al. 2015)</td>
</tr>
<tr>
<td>Social interaction</td>
<td>Helpfulness</td>
<td></td>
<td>Reference to other reviews; online social networking, online product referral (O’Mahony and Smyth 2010; Zheng et al. 2011)</td>
</tr>
<tr>
<td>Sales/Price</td>
<td>Helpfulness</td>
<td></td>
<td>Reference to other reviews; online social networking, online product referral (Goes et al. 2014; Jabr and Zheng 2014)</td>
</tr>
</tbody>
</table>

Based on main components of the proposed schema, we provide a systematic review of existing studies on explaining review helpfulness.

2.2. The Hierarchical Framework for Review Helpfulness Assessment

Hierarchical framework of product features can serve as a guide in our development of a research model and can be used to generate novel factors for assessing review helpfulness. In this section, we aim to answer the research question (what types of semantic relations exist among product features?) and introduce several basic concepts of semantic relations among product feature, and hierarchy of product features, and provide an overview of product feature hierarchy.

2.2.1. Summarizing of Hierarchical Framework for Review Helpfulness Assessment

Although previous Information Systems studies have analyzed review text to identify antecedents of review helpfulness, it has yet to explore the interaction between product features and review text, particularly semantic relationships among product features covered by online reviews.

The helpfulness of online reviews has been approached from the perspective of review text using variables such as review length (Mudambi and Schuff 2010), rating (Mudambi and Schuff 2010), emotions (Yin et al. 2016), and readability (Ghose and Ipeirotis 2011; Kuan et al. 2015). These studies, however, have relied on word-count based statistics and overlooked semantic relationships hidden in review text in explaining what constitutes a helpful review. More important, product features (e.g., screen of a phone) and their interactions, which are crucial to comments of an online review (e.g., a phone review), have rarely been examined in the assessment of review helpfulness. The objective of this chapter is to address the literature gap by introducing a hierarchical framework of product features.

2.2.2. Backgrounds and Basic concepts

We provide basic background by introducing several key terms, including online consumer reviews, review helpfulness and product features.

Online consumer reviews can be viewed as “peer-generated product evaluations posted on company or third party websites” (Mudambi and Schuff 2010). As a type of digitalized word of mouth, online consumer reviews not
only provide a way that consumers can share their opinions, but also serve as valuable resources that aid prospective consumers in their decision making.

There are variant definitions of review helpfulness (Huang et al. 2013; Li et al. 2013; Mudambi and Schuff 2010). Some of them do not reflect review diagnosticity, and some others are hard to operationalize. Drawing on the product uncertainty theory that emphasizes the incapability to assess the real quality or evaluate the fitness (i.e. the distance between known information and real quality) (Dimoka et al. 2012), we redefine review helpfulness by accounting for both the expectation and subjective evaluation of products.

Product features can be related to review helpfulness (Kim et al. 2006). Product features refer to components and attributes of a product (Liu 2011). We extend the above definition by incorporating service features concerning product transactions and meta-features of product features.

### 2.3. Semantic Relations and Product Feature Hierarchy

In linguistics, semantics refers to meaning at the levels of words, phrases, sentences, and larger units of discourse (texts or narratives). The study of semantics is also closely linked to the subjects of representation, reference and denotation. The basic study of semantics is oriented to the examination of the meaning of signs, and the study of relations between different linguistic units and compounds: homonymy, synonymy, antonymy, hypernymy, hyponymy, meronymy, metonymy, holonym, paronym.

Applying semantics to the domain of product features leads to the notion of semantic relation among product features such as “is-a” and “has-a”. In addition to traditional taxonomic relation (i.e., “is-a”), we also incorporate a type of domain-specific relation “has-a”, which includes several sub-relations such as “has-a-part”, “has-affunction”, “has-a-property”, and “has-a-service”. For example, camera “is-a” product, Nikon 6100 “is-a” camera, and camera “has-a” battery, and phone “has-a” screen.

With the understanding of semantic relations among product features, it is natural to take these relations into consideration when evaluating review helpfulness. In addition, it is noted that a pair of relations can be linked with each other via an intermediate product feature to form a hierarchical relationship. For example, “camera ‘has-a’ battery” and “battery ‘has-a’ battery life”.

In a broader sense, hierarchy refers to a parent-child structure such as a tree structure of classifications for a given set of objects. It is also named containment hierarchy. At the top of this structure is a single object — the root node, that contains or relates to all objects. Nodes below this root are more specific that apply to subsets of the entire set of classified objects.

The hierarchical framework of product features refers to a hierarchical structure that is comprised of product features and the semantic relationships among those features. We illustrate the framework and two sample hierarchies in Figure 3. Figure 3.(a) shows the construction of a hierarchy of product features through recursive application of semantic relations (e.g., has-a). Specifically, a product can “has-a” part, attribute, and function, and a feature of a product can have its own features connected through the same set of semantic relations. In Figure 3.(b) and 3.(c), both camera and movie are two specific types of product (connected via is-a relations, which are not shown in the figure); other lower-level nodes in the hierarchies represent attributes (e.g., size and plot), parts (e.g., lens and fight), or functions (e.g., shot) of the two sample products (connected through has-a relations, which are omitted in the figure). In addition, like a tree, a hierarchy can be characterized by breadth and depth. In the context of an online review, breadth describes the coverage, and depth describes the specificity, of product features referenced in the review text, separately. Breadth and depth are used as major factors in our research model, which will be discussed later.

![Figure 3: A hierarchical framework of product features and two illustrations](image-url)
2.4. The Value of Language

Every day, millions of people around the world gain access to the Internet. Current projections show that by 2030 the whole world will be online. The researcher asks himself this question, why does the search area for online products not directly take into account the language entered by customers?

Capita Translation and Interpreting (Capita TI) can provide you with some key considerations about the value and power of language and how your business can harness these benefits, as well as show you how to make some clear decisions about the direction your international e-commerce strategy should take.

How do you make sense of online business opportunities?

The Internet continues to change the way we interact with the world. Statistics from recent research papers demonstrate the mind-boggling rate at which the Internet is growing and seeping into the life of every consumer and enterprise. Recent analysis from factshunt.com shows that across the Internet there are: 510 million active websites; 14.3 trillion live webpages; 1 million people logging onto the Internet for the first time, every day; 222 active languages on Wikipedia.

The continuing spread of the Internet is affecting the value of language. It used to be accepted that English was the lingua franca of the Internet, but times have changed. In 2012, a web page in 21 languages would ensure 90% of users and 36 languages to reach 95% of users. As the remaining parts of the world population gain online access, websites will need to cater for more languages to reach the growing numbers and rising diversity of frequent Internet users.

As the reach of the Internet grows so does the diversity of language required for users to understand the content at their fingertips.

Knowing the languages to target when setting up an international sales and multilingual strategy can feel like a game of chance - and often discourages businesses from leaving their comfort zone. Indeed, there have been some high profile examples of how communicating in new languages can backfire.

**Two examples which emphasize the perils of poorly executed localization include:**

**a. Pepsi’s Slogan:**
“Come alive with the Pepsi Generation” which, when translated into Chinese, reads: “Pepsi brings your ancestors back from the grave”

**b. Coor’s Slogan:**
“Turn it loose” which, when translated into Spanish, reads: “Suffer from diarrhoea”

As well as being a PR nightmare for the companies involved, sales figures took a hit in these markets (source: Ricks, David A. Blunders in International Business, 1993).

Sound planning can ensure your strategy does not suffer the same fate. How to choose the right language for your objectives?

There is lots of information and research available to help to identify which markets and languages are potential goldmines for the sector.

**Understand the size of the challenge**

Let’s start with some basic overarching statistics. The largest markets for e-commerce sales are found in the United States, United Kingdom, Germany, France, China, Japan and Brazil. The US tops the chart with an annual online spend of $176bn or (£102.6bn) – by way of contrast, Brazil, a not unsubstantial marketplace, makes $8bn or £4.7bn annually through online sales – and China is by far the fastest growing e-commerce market.

However, underneath these macro trends, complexities emerge. For example, if you decided to make your site available to read in Simplified Chinese you will reach 22% of the online population but only 7% of the world’s online spending power. Your money could arguably be better spent by translating your content into Japanese, as although that market only represents 4% of the world’s online population it commands an impressive 10% of the buying power.

These trends slowly come to light when you compare and contrast online language preferences with spending power. Currently, to reach 80% for the world’s population you would need online content in the following languages:

<table>
<thead>
<tr>
<th>Language</th>
<th>Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese</td>
<td>ZH</td>
</tr>
<tr>
<td>Portuguese</td>
<td>PT</td>
</tr>
<tr>
<td>French</td>
<td>FR</td>
</tr>
<tr>
<td>English</td>
<td>EN</td>
</tr>
<tr>
<td>Arabic</td>
<td>AR</td>
</tr>
<tr>
<td>Indonesian</td>
<td>ID</td>
</tr>
<tr>
<td>Spanish</td>
<td>ES</td>
</tr>
<tr>
<td>German</td>
<td>DE</td>
</tr>
<tr>
<td>Korean</td>
<td>KO</td>
</tr>
<tr>
<td>Japanese</td>
<td>JP</td>
</tr>
<tr>
<td>Russian</td>
<td>RU</td>
</tr>
<tr>
<td>Italian</td>
<td>IT</td>
</tr>
</tbody>
</table>

However, these stats alone can be deceiving, because to reach 90% of the world’s economic opportunity you need to target 13 languages, as follows, with Swedish and Dutch coming in to the list and Indonesian not featuring at all:
The Value of Language setting out a strategy for localization can be a daunting prospect, and poses problems for businesses of any size. Understanding the importance and value of language to your business objectives can ensure that you develop a localization strategy that will be effective and will engage with your target markets.

3. Research Methodology

The researcher carefully selected books and websites to get relevant data for the research. The collection of data was done through an on-site company; it means a company that does these sales on amazon.com. The data set included cameras product reviews of nine products (Banna21, CanonEOSR80D, KodakPIXPRO, CanonPowerShotELPH, FujifilmXPRO, NikonD3400, PolaroidPOP, SonyDSCW830, SonyW800S2.1). The results shown in is based on the Sony DSC W830 brand which has a total of 920 responses. In each of these cases users gave their opinion on the products before they are finally released on the market. The characteristics of review text in Amazon.com dataset was explained. The resulting scores of explanatory variables were produced, the researcher showed the resulting scores of review text representing hierarchy and linguistic characteristics. The study was based on the online review process to write his article which is present below in Figure 5.

The company send their first design of product to the users for comment; the company collect user’s opinions for analysis and update; after updating, the company sends to their first design of product to the market to sell. A user can be a customer and vice versa. The data collected was then analyzed using RapidMiner.

4. Results and Discussions

The table below shows whether the comments are useful or useless. Customers will be satisfied with the product to be marketed and the company will benefit significantly.

If RH≥50, user reviews have not been done as expected, because more attributes missing.

Table 2: Result of review helpful

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Total Votes</th>
<th>Helpful Votes</th>
<th>Evaluating Review Helpfulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>CanonPowerShotELPH</td>
<td>270</td>
<td>241</td>
<td>89%</td>
</tr>
<tr>
<td>KodakPIXPRO</td>
<td>150</td>
<td>132</td>
<td>88%</td>
</tr>
<tr>
<td>SonyDSCW830</td>
<td>920</td>
<td>808</td>
<td>88%</td>
</tr>
<tr>
<td>NikonD3400</td>
<td>380</td>
<td>318</td>
<td>84%</td>
</tr>
<tr>
<td>CanonEOSR80D</td>
<td>260</td>
<td>213</td>
<td>82%</td>
</tr>
<tr>
<td>FujifilmXPRO</td>
<td>200</td>
<td>152</td>
<td>76%</td>
</tr>
<tr>
<td>PolaroidPOP</td>
<td>90</td>
<td>59</td>
<td>66%</td>
</tr>
<tr>
<td>Banna21</td>
<td>230</td>
<td>136</td>
<td>59%</td>
</tr>
<tr>
<td>SonyW800S2.1</td>
<td>510</td>
<td>195</td>
<td>38%</td>
</tr>
</tbody>
</table>

The Study was based on the Sony DSC W830 brand. Result of the analysis of verified comments according to their usefulness. Remember the result of the utility analysis are based on comments:

The company relied on the results of the analysis done by RapidMiner to compile the data in the table above.
Figure 7 shows the importance of different comments on a given product. Taking into account the content of the comments, it is clear that Figure 7 takes into account not only the number of people who made the comment but also the content of their comment. The longer the review time for the product, the more useful comments are reduced. The most removed utility is 292 people who actually made the enriching comments.

The chart advance shows the accuracy: 54.34% +/- 2.56% (micro average: 54.35%)

We found that as soon as the products are put on the site to collect the different reactions, users begin to react early. The result of the vote is increasing, which means that the users are in agreement with the product, if the users react on a given product, this product will be appreciated more quickly by the customers and it will have a high demand on the said product. This means that it may have more demand than the offer because the company has manufactured the new product based on comments from users who will be potential customers. In short, a company taking into account all the parameters and commentary can only increase profits. Reason for which demand is higher than estimated production.

3. Conclusion and Recommendation

Analysis of SonyDSCW830 using the rapid miner gave an accuracy of 54.34% which indicates a good result which the review helpfulness(RH)evaluation of SonyDSCW830 was 88%, that means the RH≥50, which means the comments of the users was as expected and the product review will be useful. Customers will be satisfied with the product to be marketed and the company will benefit significantly.

Proper evaluation of the product review allows manufacturers to improve the development of their initial product, because they pre-establish the model, the design, in short, all the characteristics of the said product. Also products can be easily accessed on the internet, for example, if the customer types “Sony camera”, all Sony camera categories are displayed. For more precision they can write “camera SonyDSCW830” and he will see only the category requested. In addition, product review easesthe purchaseof goods, it eliminates physical presence of both parties and
costs of business travel. Helpful reviews can further facilitate communication between customers and suppliers.

In practice, understanding the mechanism of helpful reviews and comprehension of language can help consumers better evaluate product and quickly locate useful reviews. Online product reviews also represent a potentially valuable tool for firms and manufacturers, who can use them to monitor consumer attitudes toward their products in real time, get valuable feedbacks, and their manufacturing, distribution, and marketing strategies accordingly.

In short, all websites must include the language window which facilitates communication with companies or factories. It should be noted that this also requires the introduction or insertion of a translation application so that both parties can understand each other and can communicate on the sale and purchase of their products. These limitations highlight the need of automatic assessing the helpfulness of online reviews.

This study makes multifold contributions to the growing literature on review helpfulness and other related topics (e.g. product feature extraction).

5.1 Recommendation

To evaluate the usefulness of product review, it is imperative to:

a) Improve websites
- Each sales website must have and respect the registration of the user (Suppliers and Customers);
- Range for user reviews, this is very important because it is with this range that new users can evaluate the quality of products.
- Insert a range for the different comments on the product, this concerns only the customers.

b) The language
- Many sales sites use only one language as the language of the site. The large e-commerce sites use several languages from which one can cite: eBay.com (forty-eight languages) which confirms its first place; amazon.com (five), Etsy.com and Shopify.com more than five. In short, as long as the Internet is international and open to all, the researcher proposes the insertion of at least five international languages in all sales sites. This will allow customers from the rest of the world to see the quality and quantity sold of the product online in order to communicate well with the sellers, in other words "multilingual international purchases".
- It is recommended that e-commerce sites design their platforms in such a manner that consumers can search for products in any language of their choice without the need for translation.

References

[5] International Journal of Electronic Commerce, 17(4), 101-136. h 2013, Leipzig, GYoon-Joo Park, Department of Business Administration, Seoul National University of Science and Technology, Seoul 08111, Korea; yypark@seoultech.ac.kr; Tel: +82-2-970-6438 Received: 27 April 2018; Accepted: 23 May 2018; Published: 25 May 2018 Germany
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[14] Ricks, David A. Blunders in International Business, 1993