“Do Non-Price Determinants Affect Consumers’ Intention to Purchase Pirated Products?”
— A Case Study in Bangkok, Thailand —

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I Introduction

Thailand is one of seven Asian countries which had a high economic growth rate in the mid 1990s. Along with rapid expansion of the economy, Thailand has become known as a shopper’s paradise where enumerable counterfeited products can be purchased cheaply, especially designer’s products such as fashion clothing, computer software, movies, and so on. Like its neighboring countries (such as Malaysia, Hong Kong, China, India, etc.), Thailand has become notorious as a major source of pirated products and is currently identified as such on the “Priority Watch List prepared by the United Trade Representative (IACC, 2003). According to estimates provided by Jagan (2001), ninety percent of the Thai consumers of locally purchased counterfeited products are in the lower income brackets. Thus, not only has Thailand gained a bad reputation for supplying counterfeit goods, but it is also being condemned for purchasing those counterfeit goods, thus providing part of the demand that drives the supply of illegal production.

It has been estimated by the U.S. Office of the United Trade Representative that the loss due to Thai copyright piracy during the six-year period from 1997 through 2002 totals nearly 1.2 billion US dollars (IIPA, 2002a, 2003; see Table 1).

From the trade-loss figures in Table 1, it can be seen that the problem of counterfeiting has not been effectively resolved by the local government despite the 1998 introduction of the Intellectual Property Law, which includes trademarks, patents, copyrights and industrial designs. For instance, it can be seen that in the year 2001, although estimated losses due to piracy in Thailand decreased 47 percent, from 245.8 to 130.3 million US dollars, that very same year there was an increase in estimated loss due to piracy in neighboring China and Malaysia, where the increase was 39 percent for China, culminating in a loss of more than 1.5 billion US dollars, and a smaller loss of over 300 million dollars in Malaysia where, however, the rate of increase was dramatically higher, doubling to an increase of 125 percent. This increase of estimated loss in the neighboring countries implies that steps taken by the Thai government have not truly addressed the problem of piracy in Thailand.
Table 1  Estimated Trade Losses Due To Piracy and Levels of Piracy in Thailand 1997 - 2002 (In million US Dollars)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>Loss</td>
<td>Level</td>
<td>Loss</td>
<td>Level</td>
<td>Loss</td>
<td>Level</td>
</tr>
<tr>
<td>Motion Pictures</td>
<td>26.0</td>
<td>70%</td>
<td>24.0</td>
<td>65%</td>
<td>24</td>
<td>60%</td>
</tr>
<tr>
<td>Sound Records/ Music Compositions</td>
<td>30.0</td>
<td>42%</td>
<td>16.6</td>
<td>45%</td>
<td>15.6</td>
<td>45%</td>
</tr>
<tr>
<td>Business Software Applications</td>
<td>28.7</td>
<td>75%</td>
<td>32.6</td>
<td>76%</td>
<td>42.7</td>
<td>79%</td>
</tr>
<tr>
<td>Entertainment Software</td>
<td>47.3</td>
<td>86%</td>
<td>29.1</td>
<td>93%</td>
<td>130.5</td>
<td>95%</td>
</tr>
<tr>
<td>Books</td>
<td>28.0</td>
<td>NA</td>
<td>28.0</td>
<td>NA</td>
<td>33.0</td>
<td>NA</td>
</tr>
<tr>
<td>Totals</td>
<td>160.0</td>
<td>130.3</td>
<td>245.8</td>
<td>242.8</td>
<td>189.0</td>
<td>227.9</td>
</tr>
</tbody>
</table>

Note: the precise meaning of "NA" and "Level" is not provided in the sources. Labels given here are as provided by the sources.

In the past, most counterfeited products or targets of piracy involved imitation of luxury products sold under fashionable labels, such as Rolex, Cartier, Hermes, Louis Vuitton, Chanel and other brands. It has been said that most counterfeiting of products has targeted only the high-priced products which most consumers see as valuable products used by the high-class members of their society (Nia and Zaichkowsky, 2000). However, in recent years, the counterfeited products and piracy not only replicate luxury products, but have expanded to include many durable and daily-life products such as books, automobile parts, foods, liquors, beverages, medicines, shoes, music and computer software (Ramayah et al., 2003).

In the case of Thailand, for the year 2002, the top two highest-ranking areas of piracy are entertainment software (86%) and business software application (75%), totaling a combined loss of 76 million US dollars. According to Mandhachitara et al. (2000), approximately 60 percent of in-Thailand sales of pirated CDs are transacted in Bangkok at an exclusive IT mall called Pantip Plaza. The remaining 40 of sales occur in other shopping malls, such as Fortune Square, Seaco Square, Tawanna Bazaar, and in various street markets. The pirating of software has caused local and multinational companies loss of the strength of their brand image and as well as loss of economic benefits in the Thai market. Moreover, such injured companies may end up spending considerable funds on litigation in the pursuit of counterfeiters, and the owners of intellectual property rights are often unable to secure speedy relief against pirates and counterfeiters (Mandhachitara et al., 2000).

Because this issue of piracy and counterfeited products or piracy is a serious problem which is destructive to Thailand’s reputation and adversely affects both the profits of local and multinational businesses and the revenue of the Thai government, government officials have attempted to combat this by controlling the supply-side through legislation and enforcement of laws that are protective of the genuine, non-counterfeited products. Another approach has been taken by private local and multinational companies, such as Microsoft, RS Promotions, Grammy Entertainment, and others, which have tried to fight back by cutting their final retail price.
However, their price-slashing strategies were not effective, and sales of counterfeit products still continue and piracy is booming in the Thai market. This suggests that there are other, non-price determinants which drive Thai consumers to seek and to purchase pirated software.

This study explores the possibility that Thai consumers' motivation to purchase pirated software is driven by factors other than price advantage. After a brief look at the Thai chain of supply, consideration will be given here instead to the demand side, where six potential non-price determinants are identified. Presentation of the research method includes features of the survey conducted in Bangkok in 2003, and analytical procedures employed. Statistical presentation of the outcome of the survey, which was in Thai, is included in the section on results and analysis along with English presentation of the items of inquiry. Discussion puts focus on the statistically valid determinants and provides consideration of managerial implications. The conclusion here is principally concerned with the Thai market for software and relevant research topics which remain as yet unexplored.

II Supply-Chain of Pirated Software in Bangkok

Like other Asian countries (e.g., China, Malaysia, India), Thailand has acquired a negative reputation for maintaining a commercial environment conducive to the production, distribution, and sales of pirated software. In Bangkok, in particular, there are numerous shopping malls that specialize in pirated software, the largest being Pantip Plaza, which dominates the Thai computer and software market. Pantip Plaza, with more than 300 stores ranging from tiny kiosks to shops in excess of 250 square meters, 299 of which dealt with computer-related products in mid-2003, supplies approximately 70 percent of Bangkok demand for computers and software, or about 60 percent of demand among all Thai prefectures (see Mandhachitara et al., 2000). The flow of pirated software sales, as well as money and influence, has been presented as shown here in Figure 1. The diagram is schematic: the box labeled “manufacturer” represents more than one, while the two boxes labeled “families” are indicative of socio-economic class divisions. The term “hostages” is used to represent employees or employee-substitutes who are incarcerated by governmental authorities.

Although surveillances by the police are routinely conducted in Pantip Plaza, most of the owners of stores dealing with pirated software are not strongly affected by police raids. Pirated software shops in Pantip Plaza are able to remain open even if their staff are arrested: there are many “hostages” (5) who are willing to go to the jail for the pirated-software store owners. This situation has developed in Bangkok because monetary influence has protected the pirated software suppliers from the policemen's operation; as evidence of this protection, Pantip Plaza’s central stock-room which supplies the shops has never been located by the police despite their raids. The payment of “protection money” to ensure that the police are not too scrupulous in their line of duty is common practice in Thailand (see Mandhachitara et al., 2000; Phongpaichit and Baker, 1998). Some observers and commentators have expressed skepticism regarding police raids. According to Cumming-Bruce (1999), such raids are performed merely as demonstration for the international community that Thai authorities are working hard to block the flow of
counterfeit products in the country.

III Demand-Side: Price vs. Non-price Determinants

3-1 Price Determinant

As for the demand side of pirated products, both price and non-price determinants are considered to be the driving factors which push consumers to purchase pirated software. However, many researchers (e.g., Albers-Miller, 1999; Bloch et al., 1993; Cordell et al., 1996; Tom et al., 1998) are in agreement in recognizing price to be the primary factor in causing consumers to purchase pirated products. Albers-Miller (1999) and Bloch et al. (1993) found that the purchase of counterfeit products is in a positive relationship with product price. That means that consumers' attitude towards purchasing pirated software is positive if they believe that the product provides higher value in terms of cost savings attached to acceptably equivalent quality. It is believed that a consumer will give preference to a product rather than to a brand if the product provides greater value for their money. As a result, in the exercise of their decision to purchase, many consumers in developing countries are said to prefer the price of a product over the genuine brand's quality and function (Tom et al., 1998).

However, this notion of the dominance of the "price factor" has also been challenged by researchers. Dickson and Sawyer (1990) noted that shoppers of pirated software are very heterogeneous in terms of their attention to, and reaction to, price and price promotions. Wee et al. (1995) argued that price is not the sole determinant in the consumer's decision to purchase counterfeit goods in Hong Kong. Though they concurred in finding that the influence of non-
price determinants varies across products (functional versus fashion/fashion-related goods), they could not categorically claim that it was the factor of price that caused consumers to purchase the cheaper, counterfeited products rather than brand-name originals (Wee et al., 1995). In this study, our intention is not to challenge or support the importance of "price factor", but simply to investigate whether non-price determinants affect Thai consumers' intention to purchase pirated software. It is important for the company to look beyond the price factor when investigating consumers' tendency to purchase the pirated software.

3-2 Non-price Determinants

There has been no general acceptance among academic researchers regarding what non-price determinants actually motivate consumers to purchase pirated software. This study, however, presents a set of non-price determinants which may clarify the reasons behind consumers' intention to purchase pirated software. The selection of non-price determinants was based on a review of related literature (e.g., Albers-Miller, 1999; Ang et al., 2001; Bloch et al., 1993; Cordell et al., 1996; Ramayah et al., 2002, 2003; Tom et al., 1998; Wee et al., 1995). In this study, the non-price determinants for purchasing pirated software, as illustrated in Figure 2, are as follows: 1) negative attitude towards "big business", 2) novelty seeking, 3) consumer's software experience and knowledge, 4) weak law enforcement of intellectual property rights, 5) acceptance of piracy among family and friends, and 6) expectation of product attributes. The order of these non-price determinants may seem somewhat arbitrary but this list tends to reflect chronological appearance and frequency of reference in the literature.

3-2-1 Negative Image of Big Business

A negative image of "Big Business" is one of the non-price determinants which is believed to affect consumer attitudes toward the purchase of pirated software. The survey of Swinyard et al. (1990) revealed that Singaporeans are less supportive of laws restricting the copying of software than their US counterparts are, and thus they exhibit high intention to make pirated copies of software. However, Tom et al. (1998) noted that a negative image of big business was also found in developed countries such as the United States. They reported that American consumers who had purchased counterfeit material hold a negative attitude towards "big business" because, in the view of those consumers, the activities taken by some large corporations in defense of their intellectual property are "ridiculous". It is apparent that negative attitudes can be formed in any country regardless of stage of socio-economic development. Thus, it is reasonable to expect that consumers with a negative image of the "big business" of software companies are likely to have a positive attitude towards the purchase of pirated software. As discussed above, the following hypothesis is stated as:

H1: "Negative image of big business" correlates positively with "overall consumer attitude to pirated software".

3-2-2 Novelty Seeking

The second non-price determinant is based on the assumption that humans are driven by
curiosity and the desire to know or find something new. Wee et al. (1995) defines “novelty seeking” as the search for something new, strange and unknown to the seeker. Although in their daily life, people occasionally seek variety and difference from their usual way of living, a condition of novelty-seeking may arise out of consumers’ satiation with product attributes, especially in the presence of low risk in the purchase of pirated over brand-name products (McAlister and Pessemier, 1982). It is therefore reasonable to assume that consumers whose desire is to satisfy their curiosity are more likely to have a positive overall attitude towards the purchase of pirated software. From this point of view, the following hypothesis is drawn as:

H2: “Novelty seeking” correlates positively with “overall consumer attitude to pirated software”.

3-2-3 Consumer’s Software Experience and Knowledge

The third non-price determinant behind consumers’ intention to purchase pirated software is “consumer’s software experience and knowledge”. This variable is introduced on the assumption that experienced and knowledgeable consumers may be less reluctant to purchase pirated software than consumers with less computer expertise. A consumer’s product experience or knowledge may come from the consumer’s own computer experience (Bearden et al., 1989). Wong et al. (1990) reported a positive relationship between students’ computer experience and their usage of pirated software, and concluded that, with regard to students, the greater the computer literacy, the greater the likelihood of pirated software purchase. It is therefore reasonable to predict that consumers with sufficient knowledge or experience regarding both computers and software are among the consumers who tend to prefer the pirated software over the genuine sources. For example, if consumers have encountered no major problem, or major differences in quality and function, or have encountered no problem for which their experience has not enabled them to counter, then they are likely to have a positive attitude towards the purchase of pirated software. Thus, this leads to the following hypothesis:

H3: “Consumer’s software experience and knowledge” correlates positively with “overall consumer attitude to pirated software”.

3-2-4 Weak Law Enforcement of Intellectual Property Rights (IPRs)

The presence of weak law enforcement of Intellectual Property Rights (IPRs) is one form of market environment which affects consumers’ intention to purchase pirated software. In developed countries, “the right of ownership” is strongly protected with strict and effective law enforcement. However, in other cultures, such as those found in Islamic or some Asian countries, the right of ownership may not absolutely belong to the inventor, or it may not be protected due to prevalence of the belief that replication is not a dishonorable act, or due to adherence to the belief that without God man is unable to create knowledge, as a consequence of which the role of the inventor is neglected (Mittelstaedt and Mittelstaedt, 1997). Thus, dominant social conventions enable the counterfeiters to supply the market with pirated software. In addition, most consumers in developing countries are likely to be protected by local laws that do not consider consumer purchase of a counterfeited product to be a criminal act, even though such an act
abets the criminal activity of sales (Cordell et al., 1996). In fact, it is noteworthy that no IPRs law allows the police to arrest an individual consumer for reason of pirated-software purchase. Moreover, most developing countries tend to have a weak law enforcement of IPRs (Connors, 1984), as a consequence of which the image of purchasing pirated software is that of getting "lower service or acceptable quality software without a manual or beautiful packaging" rather than performing an "illegal act". Thus, it is reasonable to consider weak law enforcement of pirated software to be another non-price determinant which causes the consumer to have a positive overall attitude to pirated software (e.g., Emler and Reicher, 1987; Cole, 1989). As discussed above, the hypothesis can be stated as:

H4: "Weak law enforcement of IPRs" correlates positively with "overall consumer attitude to pirated software".

3-2-5 Acceptance of Pirated Software among Friends and Family

There is no question that "friends and family" can play a very important part of each person's social life and may therefore significantly affect that person's purchasing decisions. It is generally accepted that many consumers buy particular products or brands in order to conform to the opinions of specified others, such as friends and family (e.g., Bearden et al., 1982, 1989, 1990; Childers and Rao, 1992, Ang et al., 2001; Lefkoff-Hagius and Mason, 1993). Bearden et al. (1982) defined this situation as "consumer susceptibility" in order to explain the influence of reference groups on an individual. Childers and Rao (1992) continue the work of Bearden et al. by examining consumer susceptibility with regard to familial and peer-based reference groups. The study presented here, however, concerns only the broad, unspecified influence of peers and families as forming a strong reference group which affects the consumers' attitude toward their purchase of pirated software. It is assumed, therefore, that there are consumers who purchase a product not only to satisfy a personal need but also to establish or maintain relationships with their family and peers. Thus, if the friends or family do not object to such purchase, but instead accept or encourage the purchase of pirated software, there is a high tendency that the purchaser will have a positive overall attitude toward piracy. Thus, the following hypothesis is postulated:

H5: "Acceptance of pirated software among friends and family" correlates positively with "overall consumer attitude to pirated software".

3-2-6 Expectation of Product Attributes

Consumers are believed to consider many attributes of a particular product or brand when undertaking purchase decisions. Marketing research contains a wide variety of product-attribute descriptors which have been used to obtain measures of similarity and preference (Lefkoff-Hagius and Mason, 1993). According to Lefkoff-Hagius and Mason (1993), these descriptors can be categorized into 3 types of attributes (characteristics, beneficial, and image) which affect the purchase decision of consumers. This study concerns only the "beneficial" attributes of "durability and quality" for the reason that producer of the counterfeited product is necessarily unknown and for that reason the consumer cannot benefit from any goodwill, or trademark, associated with superior functional performance (Cordell et al., 1996). It is assumed, therefore,
that consumers are likely to expect the pirated software to serve the same function as that of the original brand, and are not as likely to use the pirated version for enhancing self image, as is done with other, fashionable counterfeit products, such as clothing accessories. To sum up, the higher the consumer’s expectations of obtaining satisfaction from the pirated software, the more likely the consumers will form a positive overall attitude to pirated software. Thus, the following hypothesis is drawn:

H₆: "Expectation of product attributes" correlates positively with "overall consumer attitude to pirated software".

3-3 Relationship between “Overall Attitude towards Pirated Software” and “Intention to Purchase Pirated Software”

Consumer attitudes have long been studied as a prior or contributing condition to purchase intention (e.g., Jacoby and Kyner, 1973; Mowen, 1995; Wilkie, 1990; Hini et al., 1995). Hini et al. (1995) explain that there is a causal relationship between the attitude and intention of the consumer, and the consumers’ purchasing behavior. Consumer behavior can be predicted if the relationship of attitude and intention is clearly found. In this study, overall attitude to pirated software is defined here as a psychological response made after considering the proposed non-price determinants of pirated software during the pre-purchase process. Consumers are believed to make a general evaluation of the pirated software and then form a (positive or negative) attitude toward the product. For pirated software also, each positive or negative attitude will affect the consumers’ purchase intention. Positive overall attitudes play an important role in influencing the consumers’ purchase intention. This notion is supported by Ang et al. (2001) who found that,
among domestic consumers, there is a strong relationship between positive attitude and intention to purchase the pirated software in a developing country. Thus, a positive overall attitude is assumed to influence consumers’ intention to purchase pirated software. In line with the above discussion, the following hypothesis is stated as:

H7: “Overall attitude towards pirated software” correlates positively with “consumers’ intention to purchase pirated software”.

IV Methodology

4-1 Research Design and Sample Size

The proposed non-price determinants presented in the preceding discussion were empirically tested by a quantitative approach. As this study seeks to discover insights into consumers’ intention to purchase pirated software, a path model of non-price determinants was utilized for the empirical study, as illustrated in Figure 3.

Convenience sampling was the survey method used in this study. The written questionnaire was developed in the Thai language, with categories based on a review of relevant literature, as already discussed here, but with presentation and wording of the questionnaire items provided by the author, who is familiar with both the language and culture of the subjects being surveyed. There were three parts to this survey. Part 1 of the survey required the respondents to provide demographic information (gender, age, education, occupation, family income). Part 2 of the survey presented respondents with a list of 19 statements phrased as opinions to which the respondents had to indicate scalar agreement or disagreement; their responses were used for assessing non-price determinants affecting purchase of pirated software. Part 3 of the survey presented the respondents with a list of 6 statements which were used to assess overall attitude towards purchase of pirated software; again, respondents indicated agreement or disagreement with the questionnaire items.

The respondents for this study were Thai consumers who were known to have bought pirated software (such as computer program software and entertainment software) in the Pantip Plaza within a year or so of the time of the survey. All respondents had been aware that they were purchasing pirated software at the time of the purchase. The purchasing of other counterfeit products such as watches, clothing, and other fashion products was excluded from this study to reduce the possibility of variance of influence according to the nature of the product (Harrigan, 1983, Bloch et al., 1993). On average, respondents completed the questionnaire survey and returned it within ten or fifteen minutes. Respondents were told that this was academic research, without business or political affiliation.

During a two-week, mid-summer period, a total of 425 questionnaires were distributed to Thai consumers who had experienced purchasing pirated software at “Pantip Plaza” within the preceding twelve months. Although 368 questionnaires were returned by respondents, 18 questionnaires were excluded from this study due to incomplete data. Thus, only 350 returned questionnaires were valid, resulting in a response rate of 82.35 percent.
4–2 Measurement and Analytical Techniques

Items in Parts 2 and 3 of the questionnaire were developed with respect to the proposed concepts and the relevant literatures (Albers-Miller, 1999; Bloch et al, 1993; Tom et al., 1998; Wee et al., 1995), and provided respectively 19 and 6 variables. The variables were measured on a five-point Likert scale (e.g., 1 = strongly disagree, 3 = neutral, 5 = strongly agree). The theoretical constructs were tested by a statistical methodology called “structural equation modeling (SEM)” which takes a confirmatory (hypothesis-testing) approach to the multivariate analysis. SEM utilizes the regression model to specify causal relationships among the latent endogenous variables and enables a clearer conceptualization of the proposed theory (e.g., Aaker and Bagozzi, 1979). Therefore, the proposed model was tested statistically against computer-generated estimates using computer software called “AMOS 4” (Arbuckle, 1997). The software used enabled simultaneous analysis of the variables in the model in order to determine to what extent the model is consistent with the data obtained.
V Results and Analysis

5-1 Descriptive Statistics

Demographic characteristics of Thai consumers in terms of age, gender, education, occupation, and family income are summarized in Table 2. Nearly 73 percent of the samples consisted of people age from 16 to 30 year old. The gender of respondents is fairly well-balanced in this study, with 58 percent males and 42 percent females; however, analysis of male/female differential responses is beyond the scope of this present study. The large majority of respondents (77%) had received either undergraduate-level or high-school-level education (or their respective equivalents). The minority was nearly equally divided between secondary-school (12%) and graduate-school education (15%). As for occupation, the largest aggregate of respondents were students (34%), followed by private company employees (28%), and government officials (20%). Stated family income was widely distributed over the six income brackets, with the largest group (25%) claiming the family income bracket that subsumes average family income in Bangkok. The second largest group (21%) claimed the next highest family income bracket, and the close-running third group (19%) claimed the family income immediately below the average-income bracket.

5-2 Scale Reliability and Factor Analysis of Non-price Determinants

Table 3 presents the means, factor loading, and Cronbach values of consumer responses (N = 350 persons). Although no item showed a high value, the value of each measurement exceeded the accepted standard value of greater than 0.60 (see Nunnally, 1978). Such results indicate scale reliability for all assessed categories (six in Part 2 and two in Part 3); overall internal consistency of results is established. Four questionnaire items were dropped because of inadequate loading (less than 0.40); however, it was not necessary to remove more than one such item from any of the assessed categories. Confirmation by factor analysis was undertaken and indicated that the results reported here are reliable, with selected items loading significantly by this analysis. In total, 21 items were used to measure the data from Thai consumers for assessing the hypothesized model relationships.

5-3 Analyses of Hypotheses

An estimated hypothesized structural model of non-price determinants was provided by AMOS 4 statistical software. The data of selected items derived from confirmatory factor analysis results were analyzed by using maximum likelihood estimation. The initial model exhibited measures of fit in terms of Goodness of Fit (GFI; Jöreskog and Sörbom, 1989), Comparative Fit Index (CFI; Bentler, 1990) and other measures of fit. According to the results, the GFI and CFI values were less than the generally accepted 0.90 level suggesting that the data did not fit the model well, thus indicating that the hypothesized model needed improvement. In order to develop a final, parsimonious model, the non-significant paths were eliminated sequentially to trim the original hypothesized model and ultimately a final model of non-price determinants was thereby devel-
oped. The deleted paths (totaling three) consist of H2 (from NI to OA), H2 (from NS to OA) and H3 (from EP to OA). After deleting each non-significant path, the resulting model of non-price determinants was refitted to develop the final model of non-determinants of pirated software.

Table 2  Demographic Characteristics of Respondents (N = 350)

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>203</td>
<td>58%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>147</td>
<td>42%</td>
</tr>
<tr>
<td>Age</td>
<td>Less than 15</td>
<td>26</td>
<td>7%</td>
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<tr>
<td></td>
<td>16–20</td>
<td>91</td>
<td>26%</td>
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<tr>
<td></td>
<td>21–25</td>
<td>84</td>
<td>24%</td>
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<tr>
<td></td>
<td>26–30</td>
<td>79</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>31–35</td>
<td>49</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>Above 36</td>
<td>21</td>
<td>6%</td>
</tr>
<tr>
<td>Education</td>
<td>Secondary School</td>
<td>42</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>High School or Equal Education</td>
<td>116</td>
<td>33%</td>
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<tr>
<td></td>
<td>Undergraduate or Equal Education</td>
<td>141</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Graduate School</td>
<td>51</td>
<td>15%</td>
</tr>
<tr>
<td>Occupation</td>
<td>Unemployed</td>
<td>28</td>
<td>8%</td>
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<tr>
<td></td>
<td>Students</td>
<td>119</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>Housewife</td>
<td>15</td>
<td>4%</td>
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<tr>
<td></td>
<td>Private company’s Employee</td>
<td>97</td>
<td>28%</td>
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<tr>
<td></td>
<td>Government official</td>
<td>70</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>21</td>
<td>6%</td>
</tr>
<tr>
<td>Family Income (Baht/month)</td>
<td>Less than 7,000</td>
<td>28</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>7,001–14,000</td>
<td>49</td>
<td>14%</td>
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<tr>
<td></td>
<td>14,001–21,000</td>
<td>67</td>
<td>19%</td>
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<tr>
<td></td>
<td>21,001–28,000*</td>
<td>86</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>28,001–35,000</td>
<td>74</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>Above 35,000</td>
<td>46</td>
<td>13%</td>
</tr>
</tbody>
</table>

Note: *Average family income in Bangkok is approximately 26,000 Baht/month.

5-4 Results of the Final Model of Non-price Determinants

After deletion non-significant paths in the hypothesized model, the final model of non-price determinants was developed by examining the standardized parameters and their t-values. Each revised final model’s measures of fit are presented here in Table 4 in terms of GFI, CFI and other goodness-of-fit measures. The empirical results indicate that the final, revised model has a reasonably good overall fit, much improved over the original hypothesized model, as indicated by the improvement of GFI, AGFI, and CFI, all of which provided values above the generally accepted 0.90 standard level (see Arbuckle, 1997). Table 4 presents the standardized parameter estimates for each of the non-price determinants, enabling comparison of the hypothesized and final models. In particular, the GFI and CFI’s values increased from 0.89 and 0.87 to 0.94 and
0.91 respectively, exceeding the generally accepted 0.90 level. Furthermore, the RMSEA value decreased from 0.06 to 0.04, indicating a reasonable error of approximation (Browne and Cudeck, 1993). In addition, the relative chi-square (χ²/df) decreased from 3.48 to 2.57, indicating a reasonable fit between the final model and the sample data (Marsh and Hocevar, 1985). The following hypothesized relationships are supported as follows: H3 (from SE to OA), H4 (from WL to OA), H5 (from AP to OA), and H7 (from OA to PI). The final model of Thai consumers is summarized and illustrated in Figure 4.

Table 3  Factor Analysis and Reliabilities Based on Cronbach’s Alphas

<table>
<thead>
<tr>
<th>Measurement Items</th>
<th>Mean*</th>
<th>Factor Loading</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exogenous Constructs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative image of big business (NI)</td>
<td></td>
<td></td>
<td>0.72</td>
</tr>
<tr>
<td>Software companies take too much profit from consumers</td>
<td>NI1</td>
<td>3.25</td>
<td>0.69</td>
</tr>
<tr>
<td>IPRs laws protect software companies rather than local consumers</td>
<td>NI2</td>
<td>3.45</td>
<td>0.76</td>
</tr>
<tr>
<td>Software companies lobby too much for their copyrights</td>
<td>NI3</td>
<td>3.67</td>
<td>0.66</td>
</tr>
<tr>
<td>I don’t agree with the IPRs laws in Thailand</td>
<td>NI4</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Novelty seeking (NS)</td>
<td></td>
<td></td>
<td>0.65</td>
</tr>
<tr>
<td>Buying the pirated software to satisfy my curiosity</td>
<td>NS1</td>
<td>2.8</td>
<td>0.78</td>
</tr>
<tr>
<td>Challenging myself and having a fun</td>
<td>NS2</td>
<td>3.3</td>
<td>0.89</td>
</tr>
<tr>
<td>Many (pirated) softwares excite me a lot</td>
<td>NS3</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Consumer’s software experience and knowledge (SE)</td>
<td></td>
<td></td>
<td>0.87</td>
</tr>
<tr>
<td>I feel no risk in buying pirated software because I know computers</td>
<td>SE1</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>I know how to use the software</td>
<td>SE2</td>
<td>3.45</td>
<td>0.69</td>
</tr>
<tr>
<td>There’s no difference in buying pirated software over genuine software</td>
<td>SE3</td>
<td>3.53</td>
<td>0.65</td>
</tr>
<tr>
<td>Weak law enforcement of IPRs (WL)</td>
<td></td>
<td></td>
<td>0.78</td>
</tr>
<tr>
<td>I can buy pirated software freely in the shopping mall</td>
<td>WL1</td>
<td>3.49</td>
<td>0.73</td>
</tr>
<tr>
<td>There’s no penalty for purchasing pirated software</td>
<td>WL2</td>
<td>4.31</td>
<td>0.81</td>
</tr>
<tr>
<td>The police won’t bother me about purchasing pirated software</td>
<td>WL3</td>
<td>4.10</td>
<td>0.89</td>
</tr>
<tr>
<td>Acceptance of pirated software among friends and family (AP)</td>
<td></td>
<td></td>
<td>0.83</td>
</tr>
<tr>
<td>My friends or families never look down when I show them pirated software</td>
<td>AP1</td>
<td>4.14</td>
<td>0.68</td>
</tr>
<tr>
<td>My friends or families give me information for buying pirated software</td>
<td>AP2</td>
<td>4.81</td>
<td>0.87</td>
</tr>
<tr>
<td>I shop for pirated software together with my friends or families</td>
<td>AP3</td>
<td>4.62</td>
<td>0.81</td>
</tr>
<tr>
<td>Expectation of product attributes (EP)</td>
<td></td>
<td></td>
<td>0.79</td>
</tr>
<tr>
<td>Quality of pirated software is the same as the genuine software</td>
<td>EP1</td>
<td>3.95</td>
<td>0.64</td>
</tr>
<tr>
<td>Pirated software can be used for a long time like the genuine software</td>
<td>EP2</td>
<td>3.46</td>
<td>0.61</td>
</tr>
<tr>
<td>Pirated software performs like the genuine software</td>
<td>EP3</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Endogenous Constructs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall attitude towards pirated software (OA)</td>
<td></td>
<td></td>
<td>0.83</td>
</tr>
<tr>
<td>Buying pirated software provides me a lot of benefits</td>
<td>OA1</td>
<td>4.78</td>
<td>0.82</td>
</tr>
<tr>
<td>I feel “happy” about buying pirated software</td>
<td>OA3</td>
<td>4.58</td>
<td>0.85</td>
</tr>
<tr>
<td>I feel no guilt or shame about buying pirated software</td>
<td>OA4</td>
<td>4.25</td>
<td>0.89</td>
</tr>
<tr>
<td>Intention to purchase pirated software (PI)</td>
<td></td>
<td></td>
<td>0.89</td>
</tr>
<tr>
<td>I would consider pirated software for my next purchase</td>
<td>PT1</td>
<td>4.58</td>
<td>0.94</td>
</tr>
<tr>
<td>I willingly talk positively and openly about pirated software</td>
<td>PT2</td>
<td>4.68</td>
<td>0.89</td>
</tr>
<tr>
<td>I willingly recommend other persons to buy pirated software</td>
<td>PT3</td>
<td>4.36</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Note:
* All items are measured on five-point Likert scales (e.g., 1 = strongly disagree, 3 = neutral, 5 = strongly agree)
** Item dropped because of not loading strongly (or loading < 0.40)
### Table 4  Structural Parameter Estimates: Hypothesized and Final Path Model

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path</th>
<th>Hypothesized Model</th>
<th>Final Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>From</td>
<td>To</td>
<td>Standardized Estimate</td>
</tr>
<tr>
<td>H1</td>
<td>NI</td>
<td>OA</td>
<td>γ 11</td>
</tr>
<tr>
<td>H2</td>
<td>NS</td>
<td>OA</td>
<td>γ 12</td>
</tr>
<tr>
<td>H3</td>
<td>SE</td>
<td>OA</td>
<td>γ 13</td>
</tr>
<tr>
<td>H4</td>
<td>WL</td>
<td>OA</td>
<td>γ 14</td>
</tr>
<tr>
<td>H5</td>
<td>AP</td>
<td>OA</td>
<td>γ 15</td>
</tr>
<tr>
<td>H6</td>
<td>EP</td>
<td>OA</td>
<td>γ 16</td>
</tr>
<tr>
<td>H7</td>
<td>OA</td>
<td>PI</td>
<td>β 21</td>
</tr>
</tbody>
</table>

**Goodness-of-fit**
- Chi-square / degree of freedom (CMIN/DF) 3.48 / 2.57
- Goodness-of-fit index (GFI) 0.89 / 0.94
- Adjusted Goodness-of-fit index (AGFI) 0.87 / 0.92
- Comparative fit index (CFI) 0.87 / 0.91
- Root Mean Square Error of Approximation (RMSEA) 0.06 / 0.04

**Note:**
- The standardized estimates and related t-values are deleted because of non-significant t-values

---

### Figure 4  A Final Model of Non-price Determinants

![Figure 4](image)

**Note:**
- Paths are not significant, as indicated by dotted lines
- Figures in the paths show standardized estimates for the statistically reliable relationships; see Table 4.

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### VI  Discussion and Managerial Implications

The purpose of this study was to conceptualize the non-price determinants of consumers' intention to purchase pirated software and to discover which non-price determinants may be driv-
ing Thai consumers to purchase pirated software. The results of the study provided strong support for the final (modified) proposed path model of non-price determinants, as illustrated in Figure 4. The results reported here show that apart from the price factor, Thai consumers in Bangkok do indeed consider non-price factors as affecting their intention to purchase pirated software. Although not all of the six proposed hypotheses were supported, clearly three of the proposed factors have substantial influence on Thai consumers' intention to purchase pirated software. These three non-price factors strongly affecting Thai consumers are as follows: the consumer-purchaser's software experience and knowledge (H3), weak law enforcement of IPRs (H4), and acceptance of pirated software among friend and family (H5). Moreover, it was found that Thai consumers with a positive overall attitude to pirated software will be likely to purchase pirated software in the future (H7).

6-1 Consumer's Software Experience and Knowledge
This non-price factor has shown that Thai consumers with experience and knowledge of software are inclined to purchase the pirated software rather than the original, genuine software. This result is confirmed by many other studies which have reported that consumers with computer and software knowledge have a high tendency to buy the pirated software, especially such consumers in developing countries (e.g., Solomon and O'Brien, 1990; Taylor and Shim, 1993; Wong et al., 1990). As for Thai consumers, two reasons can be given as explanation of this situation.

6-1-1 Government Policy on Information and Communication
In line with the governmental policy of attempting to build or enhance information industry in Thailand, Thai authorities have attempted to increase the country's computer literacy rate since the late 1980s and early 1990s. Accompanying that policy, increased budgets have been allocated for educational programs that require or implement instruction in the use of computers and computer software. As a result, many Thai educational institutions (such as high school, universities, etc.) have begun or expanded the usage of computers within their organization. The acquired knowledge and experience subsequently provided a motive to purchasing the cheaper, pirated software. This interpretation is also supported by other studies (e.g., Wong et al., 1990; Rahim et al., 1999). Moreover, in some places in Bangkok, consumers are allowed relatively unrestricted use of the internet free of charge, as provided by the Ministry of Education. It can be concluded that governmental policy on information and communication has provided consumers with the software experience and knowledge that enables them to be tempted to take advantage of the availability of pirated software in their country.

6-1-2 Internet Cafés
During the last 5 years, the number of internet cafés has increased rapidly in Bangkok. It is believed that internet cafés are among the biggest contributors to internet growth and computer literacy in Thailand. As there are now many internet cafés suppliers, the cost of using an internet cafés has drastically decreased in the market (currently, only 10–20 Baht per hours; 1 Baht = 3
Yen). Consumers in Bangkok therefore can easily and cheaply gain opportunities to use and practice on computers, even if they cannot afford one of their own. The internet cafes are particularly popular with students (primary, secondary, and university) and with employees, and are generally accepted by the Thai society as a good place for people to acquire knowledge and skills. Such increased experience and familiarity with the operation of computers and software has become one of driving forces of the Thai consumers’ intention to purchase pirated software in the local market.

6-2 Weak Law Enforcement of IPRs

This factor has shown that governmental policy of anti-piracy has not worked effectively to prevent piracy in Thailand. Although the government has tried to solve this problem by establishing thirteen new state agencies for suppressing copyright violations, the problem is still waiting to be solved. Instead, many general shopping centers have been infected by this piracy epidemic. Piset Chiyasak, general manager of the Thai Recording Industry Association (Tria), a group of major recording firms including EMI, said a return of piracy at Pantip Plaza and other shopping centers after the raids by the police resulted a discontinuity in governmental policy (Ammatcharoenrit, 2002). Moreover, “bribing the police” is also another problem which can not be easily solved in Thailand. Due to the usage of protection money, as mentioned earlier, many pirated software store owners are not strongly affected by the police raids (Mandhachitara et al., 2000). As a result, weak law enforcement of IPRs has also driven Thai consumers towards the purchase of pirated software.

6-3 Acceptance of Pirated Software among Friends and Family

The result of this study has confirmed that the influence of peers and family is very important in affecting the consumer’s intention to purchase a product and service in Thailand (Ang et al., 2001; Lefkoff-Hagius and Mason, 1993). In this study, the influence of friends and family strongly affected Thai consumers’ intention to purchase pirated software. The effect of this reference group can be explained by characteristics of the Thai culture, which is traditionally collectivist and stands in contrast to Western culture, which promotes individualism and protects the right of ownership of innovators. According to Suvannathat (1979), primary values of Thai society (such as gratitude, norm, integrity, respect to seniority, friendship to neighbor, generosity to others, etc.) are basically learned from the family. Thus, Thailand represents a culture with relatively strong, extended-family orientation which gives priority to neighbors and friends (Kunstadter, 1985; Tremblay, 1990). Because Thai culture does not traditionally recognize ownership rights for the innovator, the reference group (family and friends) easily accept the purchase of pirated software without a feeling of guilt or shame, and feel little concern that such purchase is seen as illegal or unethical behavior, either within Thailand or beyond its borders. This culturally-induced group attitude is confirmed by various studies of ethic belief (e.g. Gutterman and Anderson, 1997; Jain, 1996; Nill and Shultz, 1997; Shore et al., 2001; Shultz and Saporito, 1996). Hence, the reference group’s perceptions support Thai consumers’ intention to purchase the pirated software.
6-4 Managerial Implications

Piracy is not a problem which can be solved overnight in developing countries. To combat pirated software, there are many anti-counterfeiting strategies which can be applied in the local market such as warning strategies, withdrawal strategies, and prosecution strategies (see a systematic discussion in Jacobs et al., 2001). However, the findings of this study suggest that, in addition to such strategies, there may be alternative strategies for combating the purchase of pirated software in Thailand.

First, the company should apply the strategy of "lobbying for a stronger anti-counterfeiting law". The result found here have shown that Thai people felt they could buy pirated software freely in the shopping plaza without any penalty. This condition has created the view that the purchase of pirated software does not breach the IPRs laws of Thailand. Therefore, it is important for software companies to change this market environment through lobbying for stronger anti-counterfeiting laws in the Thai market. They should also promote the view that the usage of pirated software both individually or within organizations iscrime that has adverse effects on the economy of Thailand. Currently, most counterfeiters or corporate users are fined, and do not go to the prison. Moreover, there is as yet no law to protect employees who report to authorities the usage of pirated software in their company. As a matter of fact, the employee who reports the usage of pirated software is usually fired or threatened. Therefore, the Thai government should also pass new IPRs laws which prohibit the companies from firing employees who report usage of pirated software.

Second, while consumers with software experience and knowledge are likely to purchase pirated software, it is important to include IT ethics courses in the curriculum of high school and university in order to raise student awareness concerning ethical computer and software practices. This is especially important because in Thailand, most computer and software knowledge is taught within education institution. Once the students are educated on the impact of software piracy, they may change their attitude towards the usage of pirated software and eventually will start to appreciate the need for the legal protection of genuine software. Furthermore, a code of ethics should be also introduced by Thailand's academic institutions which all students should be required to read and sign upon matriculation and/or enrolment. Academicians should offer practical IT classes to demonstrate to the students the hardships and obstacles associated with the software development. When students learn the tediousness and difficulty of developing software in their IT classes, they will be more likely to understand the protective efforts made by software developers and the justification for signing of a code of ethics during their enrolment (Rahim et al., 1999).

Third, strategies for changing ethic behavior should be applied to change the belief structure of the friends and family regarding attitudes towards pirated software in Thailand. According to the findings here and elsewhere, the influence of this reference group is very strong and affects Thai consumers' decision to purchase pirated software. If these people continue believing that usage of pirated software is not unethical behavior in the market, the problem of pirated software can not be solved effectively. Thus, this strategy of changing ethic behavior could be imple-
mented by sending effective messages of public awareness of the need to protect of IPRs, and targeting those messages to those influential friend-and-family groups. The message should try to show that the usage of pirated software should be viewed culturally as a criminal activity, and that Thai people can receive substantial gains from using genuine software (such as increased employment in the county, increased local software development, social benefits resulting from the generation of increased governmental revenue gained from tax payment of software companies, and the growth of the local software industry). Moreover, the software companies should keep trying to promote IPRs to the family, the most important group in the Thai society. Moreover, educating Thai children about IPRs is also important for the prevention of piracy in the future. Although many IPRs laws have been enacted in Thailand, most Thai people, both teenagers and adults, still do not know exactly what IPRs are. This is understandable because the concept of IPRs is new to the Thai society and was not included in compulsory-level education in Thailand. Therefore, it is also important for both the companies and the Thai government to educate young Thai children in primary schools so that they understand why Thai people should respect the right of ownership of inventors.

Finally, the proposed suggestions based on the findings reported here may help reduce the rapid expansion of pirated software in Thailand and in doing so protect the country’s benefits and the rights of ownership for innovators, thus encouraging Thai people to utilize their abilities to greater advantage. Although these are not perfect strategies for solving the piracy problem, they are believed to be likely to change the Thai society into a market where a variety of knowledge is encouraged and promoted. Eventually, that will help facilitate and develop the country’s information industry in the future. Without the protection of the right of innovators, there will be no development of the software industry in the Thai market.

VII Conclusion

The selling and buying of pirated software will continue in Thailand or other developing countries as long as there is no direct control of both the supply and demand of pirated software in the market. With the advancement of technology in this 21st century, it is much easier for any single person to make an illegal copy of original, legally protected software and sell it to a third party, particularly in today’s developing information society which allows the buyer and seller to make a transaction quickly and freely in the cyberspace market. Therefore, it is important in Thailand for every societal group (government, producer, consumer, software store owners, distributors, the police, etc.) to participate and cooperate together to create a clean and legalized society which provides greater opportunities and benefits for innovators, not counterfeiters. Among them, the consumer group is the first and most important group to be targeted for increased awareness of the seriousness of this piracy issue because it is their demands that create the vicious circle: “if there is a demand for pirated software, there are always pirated software’s suppliers in shopping plazas in the Thai market”.

In this study, we have found that apart from the price of pirated software, Thai consumers consider non-price factors in their intention to purchase pirated software in Bangkok. This study has
unveiled that price is not the only strong motive for consumer purchasing of pirated software. The results of this study imply that software companies which plan to enter the Thai market should consider the non-price determinants of Thai consumers if they wish for successful future marketing strategies.

Finally, this study has uncovered possible areas for future research into consumers' post-purchase behavior of pirated software. Firstly, it would be instructive to examine consumers' post-purchase behavior following the purchase of pirated software. If they are satisfied with the pirated software, will they still buy the same pirated software, or will they switch to the original software, particularly to access upgrades? Does such an inclination to "go legitimate" increase with age or economic status of the consumer? If the pirated software purchasers are dissatisfied with the product, do they complain to the seller or conduct any negative word-of-mouth campaign? Secondly, it is desirable to have a base-line comparison of the effects of price and non-price determinants for this sort of market that provides easy access to pirated software. This is desirable for assessing the value of strategies of price-reduction of the original product. Particularly if market conditions can be altered to reduce or suppress the availability of pirated software, it would then be possible to determine how the two types of purchase-intention determinants, price and non-price, are subjected to change. Such studies may be of particular value in curbing the development of software piracy in countries which are at present on the brink of IT expansion.

Notes:

(1) According to Ramayah et al. (2003), product counterfeiting or piracy is generally used to describe the deliberate infringement of copyrighted works or trademarks on a commercial scale. They classified the "piracy" in the music industry as the unauthorized copying in terms of simple piracy, counterfeits and bootlegs.

(2) "Pantip Plaza" is an exclusive IT mall in Bangkok and is known as the center for hardware and software for computer demand in Thailand.

(3) "Fortune Square", "Square" and "Tawanna Bazaar" are the names of reputed shopping malls in Bangkok areas. They are the middle-class one-stop shopping centers which offer a variety of products and services, including the hardware and software like Pantip Plaza.

(4) "RS promotions" and "Grammy Entertainment" are the local music and entertainment companies in Thailand.

(5) Mandhachitara et al. (2000) define that "Hostage" are the people who, on the rare occasions that a store is successfully prosecuted for the sale of counterfeit material, are paid by the shop owners to go to prison in place of either the storeowner or their employees.

(6) Bearden et al. (1989) defines this situation as "information susceptibility" which explains that when the consumer has no knowledge about the product, they tend to be strongly affected by the information from their friends and family.

(7) Childers and Rao (1992) found that in a product decision, peers will strongly affect consumers' purchase decision for private luxuries than for public necessities.

(8) Lefkoff-Hagius and Mason (1993) conclude that most researchers make the distinction between three basic types of attributes: characteristics (physical properties): beneficial (what the product will do for the user); and image (how the product represents the user to others or
self).

(9) Browne and Cudeck (1993) suggest a value of about 0.08 or less for the RMSEA to indicate a reasonable error.

(10) According to Marsh and Hocevar (1985), many researchers have recommended using ratios from 2 to 5 to indicate a reasonable fit.

References


IACC (2003) Special 301 Recommendation (February 14), Office of the United Trade Representative, Washington D.C.


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