

ORIGINAL RESEARCH: Defining Thai Product Quality in the 21st Century

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Abstract

There is no single universal definition on product quality. Different people may have a different view of product quality, which makes it difficult to define product quality. This research takes Thailand as a case study, and by examining 4 different key sectors through interviews and questionnaires, shares the opinions and thoughts they have on Thai product quality. As a result, the research proposes an updated definition of Thai product quality as: “being good in all aspects plus fitness with the intended use”. This definition is associated with significant product values for Thai people which include “reliability”, “function”, and “durability” as the most influential attribution factors on consumer buying decision. Furthermore, “support service”, “value for money” and “adaptability” are other important attribution factors that Thai people use in evaluating product quality.

Keywords: attribution factors, interview study, product quality, questionnaire study, Thailand.

Introduction

In order to win, maintain one’s position, or just to survive the competition in an open market, firms need to come up with strategies that can exploit the market, shape consumer preferences, and deliver their expectations, so that in return they are rewarded with a larger market share (Kalyanaram et al. 1995, Carpenter and Nakamoto 1989, Robinson and Fornell 1985). Winning the market through innovation by launching a new product is one of the most common strategies that firms may use. However, there is compelling evidence through a number of studies that only introducing new products in order to become the first movers into a market may not guarantee a big advantage or success (Golder and Tellis 1993, Shankar 1999, Zhang and Narasimhan 2000); many of the recently developed gadgets have demonstrated countless failures. In fact, simply delivering superior product quality might be the most important key in appealing to the today’s markets (Tellis and Golder 2001).

Although everyone seems to understand what “product quality” means, there is no universal definition of it. There are several reasons for this; first, the term “quality” is very difficult to define, measure, and assess with clarity, and second, the character of quality is also changing over time (Curry and Fauld 1986). Accordingly, when it comes to product quality, it is challenging to agree on one absolute definition. This includes differences in perspectives and academic paradigms.

Therefore, the research question I ask here is the definition of product quality, and especially “what could be the definition of product quality in the 21st century in Thailand?” Up to now, there has been no research on product quality definition in a specific country or region. This research examines and reviews previous empirical studies to see how experts and scholars had defined product quality so far. The research takes place in Thailand and applies executive interviews with government officers, producers or manufacturers of product, and intermediate sellers, as well as customer opinion-based questionnaires at point of sale (POS). As such, the research presents the effects of quality attributions on Thai consumer buying decision, and the prospects of Thai product quality; it also proposes a more up to date definition of product quality, specifically for the case of Thailand, in three product categories: electronics or IT

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products, automobiles, and home appliances. Furthermore, the research outcomes, thoughts and views from four different sectors reveal the missing gaps between the regulators, market suppliers and consumers' opinions on product quality and this might improve product quality improvement in Thailand as a whole.

In literary terms, the word "quality" is derived from an old French word "*qualite*", and "*qualitas*" in Latin; this term originally refers to 'character, disposition' and 'particular property or feature' (Baldick, 2008). The definition of quality in the Merriam-Webster Dictionary is an intelligible feature by which a thing may be identified, or degree of excellence or superiority in kind, whereas in Cambridge Advanced Learners' Dictionary, quality means how good or bad something is, or a characteristic or feature of something. Indeed, these dictionary definitions are usually adequate to help general audience understand the basic concept of quality. But in term of management and business practice, these quality definitions are inadequate; quality management experts and scholars for many years have tried to define quality/product quality in various implications. Differences in perspectives and academic paradigms are the basis for delivering a variety of definitions for quality/ product quality.

Quality Digest, the leading magazine that covers a wide range of quality issues with general interest, asked their readers about the meaning of quality in their December 1999 article and requested them to participate by sending their definitions of quality. As a result, more than eighty readers sent their quality definitions which were then posted on the *Quality Digest Online*. Many readers came up with interesting definitions, such as "Quality is the expression of human excellence", "Quality is being clean, precise, and flawless", "Quality is meeting the customer's needs in a way that exceeds the customer's expectations" or "Quality is the best value for money". In addition, many also quoted numerous famous definitions from quality experts/gurus: Philip B. Crosby, A.V. Feigenbaum, Peter Drucker, W. Edward Deming, Joseph M. Juran, Genichi Taguchi, Subir Chowdhury and etc. Some of these quality definitions and interpretations are given in Table 1.

Table 1: Some famous definitions of quality offered by the related experts

"Quality is conformance to requirements"	(Crosby, 1979)
"Quality is the total composite product and service characteristics of marketing, engineering, manufacturing and maintenance through which the product and service in use will meet the expectations of the customer"	(Feigenbaum, 1983)
"Quality in a product/service is not what the supplier puts in; it is what the customer gets out and is willing to pay for"	(Drucker, 1985)
"Quality in customers' perception is the only thing that matters"	(Deming, 1986)
"Quality is those features of products which meet customer needs and thereby provide customer satisfaction", "Quality is freedom from deficiencies", and "Quality is fitness for use",	(Juran, 1988)
"Quality is loss avoidance"	(Taguchi, 1995)
"Quality combines people power and process power"	(Chowdhury, 2005)

Other quality oriented professional groups, for instance, the American Society for Quality (ASQ), ISO 8402:1994 and ISO 9000:2005 have also developed their own quality vocabulary or standard. For the American Society for Quality (ASQ), quality refers to the characteristics of a product or service that bear on its ability to satisfy the stated or implied needs free of deficiencies. For ISO 8402:1994, quality is the total features and characteristics of a product or service that bear on its ability to satisfy the stated or implied needs, while quality in ISO 9000:2005 means the degree in which a set of inherent characteristics fulfill requirements.

Defining product quality becomes much more complicated when we look at different perspectives and academic paradigms. In the manufacturing/supply base, producers define product quality as the degree to which the product was produced correctly and conformed to the requirements. On the other hand in the user/demand base, consumers focus on product quality over specifications in which the product satisfies the consumers' needs and wants. Considering the product alone, product quality puts more emphasis on measurable variables; the differences in product quality may also reflect the differences in product quantity. Yet in term of value, product quality is evaluated at acceptable costs and acceptable prices.

Quality/Product quality is also defined differently in various academic paradigms. In engineering, quality is seen as product integrity and a way to reduce cost. In perceived quality, quality is referred to consumers' perception of overall product quality with respect to intended purpose and relative alternatives. Moreover, in quality review, the terms quality assurance and quality control are often used to verify and confirm that all criteria meet the requirements.

Thus there is no single universal or even national definition of product quality. To summarize, here are the common definitions of product quality that may be shared among various perspectives and academic paradigms:

Conformance to specifications; means how well a product meets the targets, free from errors and tolerances determined by its designers. *Fitness for use*; focuses on how well a product performs its intended function or use. This also essentially means *meeting and exceeding consumer expectations*. *Value for price paid*; refers to how well a product quality is worth in comparison to its price as well as economic value. As quality/product quality is a perception, depending on the conditions and subjective attributions, some definitions may be more correct and appropriate. However, search for a universally valid definition of product quality may continue forever, because of the changing perceptions and times.

Methodology

Two primary data collection methods, interview and questionnaire, were applied as tools in conducting this research. During February and March 2012, personal or executive interviews were carried out with government officers, producers/manufacturers of products, and intermediate sellers in Thailand. All three different sectors of participants were asked the same set of questions: in your opinion, "what are the factors that influence customers' decision in buying a product?", "what is/are other factor(s) that can be used to evaluate product quality?", "what is your definition of product quality?", "what could be the differences in today's product quality and the next 5(10) years' product quality?" and "Why do you think that?"

Regarding the first interview question, "what are the factors that influence customer's decision in buying a product?", the participants were requested to rank their preferences in seven given attribution areas, including "function", "ease of use", "reliability", "durability", "design", "eco-friendliness", and "customer satisfaction". These seven attribution factors were identified as follows: *Function*: the ability and performance of a product compared with previous or similar type of product, e.g. speed, technology, etc. *Ease of use*: easy use without any difficulties. *Reliability*: creditability, market recognition, brand awareness, etc. *Durability*: performance over a long period of time without technical error and physical breakdown. *Design*: color, size, weight, etc. *Eco-friendliness*: green material, recyclable, energy saving, carbon credit, etc. *Customer satisfaction*: customer overall satisfaction with previous experience of usage of the same brand product or same company.

The three different sectors of participants included government officers, producers/manufacturers, and intermediate sellers. The ethical issues of this study were taken into consideration; all persons interviewed for this

study provided an informed consent to the researcher for the use of their feedback information on product quality for research purposes and an academic publication. No names of persons are mentioned and the position of the individuals is only revealed in an academic context with no intention of use for promotion or any other possible non-academic purposes. This paper has used the collected data with the consent of the interviewees and only in an academic perspective, particularly in regard with the concept of product quality.

As for *Government Officers*, three government officials, including two chief central government officers and one district government executive officer, participated in the interview. The Permanent Secretary of the Ministry of Industry of Thailand, and the Director of One Stop Export Service Center represented the opinions of the central government, whereas the Executive Chairman of Industrial Promotion Region 9² represented the local government views. The three government officials shared their opinions and thoughts on the mentioned product quality questions, and the questions were intended for an understanding of their perception regarding overall product quality.

As for *Producers/Manufacturers*, four different producers/ manufacturers in three distinctive product categories participated in this interview. From electronics or IT products, such as mobile phone, computer, laptop, and tablets, the general manager of the Chonburi branch of a very famous smart phone company shared his opinions on electronics/IT product quality subjects. From the automobiles industry, the general manager and customer quality-engineering department of a large Japanese carmaker, and the department manager of another famous Japanese carmaker took part in the interview. From the home appliances sector, including television, refrigerator, washing machine, and air conditioner, the deputy general manager and quality assurance department of a well-known Japanese maker of home appliances shared his points and visions on home appliance product quality issues.

As for *Intermediate Sellers*, eleven executive interviews were made with intermediate sellers in Chonburi Province. Four store managers/salespersons in the area of mobile phones and other electronics represented the electronics and IT products sector. Four general managers of local branches in Chonburi of four major Japanese carmakers, represented the automobiles sector, and three general store managers in the home appliances market represented the home appliances sector.

All interview participants were selected based on their major duties and responsibilities over product quality. For instance, among government officers, the Permanent Secretary of the Ministry of Industry of Thailand is responsible for the promotion and regulation of all industries, including regulation and standards of quality control and quality assurance; the Executive Chairman of Industrial Promotion of Region 9 is responsible for monitoring and administering local business/manufacturing operations in Thailand's 6 top industrial provinces (Rayong, Chanthaburi, Trat, Chonburi, Samut Prakan, and Chachoengsao) to ensure that all activities are aligned with the central government regulation and international standards. In addition, the interviews with general managers/department managers were made with the leading manufacturer companies in three different industries, including electronics/IT products, automobiles (local sales branches of Japanese brand automobile companies), and home appliances. The research was able to obtain some in-depth information, true opinions and outlooks towards product quality issues.

As for the questionnaire study, through March 2012, customers' opinion based questionnaires on product quality were handed out to three consumer target groups at various stores and shopping malls in Chonburi Province. Chonburi Province is a very diverse place and good for sampling as it may represent the Thai dynamic population with its fast growing industry and manufacturing center, business commerce, and as a destination for tourists, with many job

² Industrial Promotion Region 9 is operating directly under Ministry of Industry of Thailand. Since its establishment, the Industrial Promotion Region 9 is the biggest and most profitable industrial region of the country. The operation areas cover 6 major industrial provinces, which are Rayong, Chanthaburi, Trat, Chonburi, Samut Prakan, and Chachoengsao, see www.dip.go.th.

opportunities. In order to capture consumer's real perception at real time, 500 questionnaires were distributed to the consumers at point of sale (POS) at central locations in Chonburi. Right after their purchases, consumers were asked to fill out and answer the following questions: "What kind of product(s) did you buy today?", "what factors influence your decision in buying a product?", "what is your definition of product quality?", "what is/are other factor(s) that can be used to evaluate product quality?", "what could be the differences in today's product quality and the next 5 years' product quality? And "why do you think that?"

Similar to the executive interview, for the second question of "what are the factors that influence customer's decision in buying a product?", the respondents were requested to rank their preferences in seven various attributions. Moreover, in order to make the results comparable across sectors, the research applied a similar set of closed and open ended questions to those three target consumer groups who had just bought a mobile phone, computer, laptop, tablet, car, television, refrigerator, washing machine, or an air conditioner. Even though there were difficulties in approaching and convincing consumers to fill out the questionnaires and some interpreting complications, in the end, the research was able to collect 308 filled out questionnaires.

Findings and Results

This section presents the results and data analysis in three subsections: effects of attributions on consumer buying decision, prospects of product quality, and product quality definition.

Effects of Attributions on Consumer Buying Decision: the attributions that were used in exposing the effect and influence on consumer buying decision included *function* (the ability and performance of a product compared with previous or similar type of product, e.g. speed, technology), *ease of use* (easily used without any difficulties), *reliability* (credibility, market recognition, brand awareness, etc), *durability* (performance over a long period of time without technical error and physical breakdown), *design* (color, size, weight,...), *eco-friendliness* (green material, recyclable, energy saving, carbon credit, ...), and *customer satisfaction*.

All three government officers gave a perfect score of 7 and agreed to rank "function" as number one with the most influence on consumer buying decision, followed by "ease of use", "reliability" and "durability", "design" and "customer satisfaction", while "eco-friendliness" was ranked at last. On the other hand, producers/manufacturers said that "reliability" should have the most influence, whereas "function", "durability", "customer satisfaction", "ease of use", "design" and "eco-friendliness" had respectively less influence. Comparably, intermediate sellers upheld that "reliability" have the most influence over the other attributes of "function", "design", "customer satisfaction", "durability", "ease of use", and "eco-friendliness" on consumer buying decision. The interview result on the effect of attributions on consumer buying decision by ranking is illustrated in Table 2.

Table 2: Ranking the attribution factors on consumer buying decision by government, producer/ manufacturer, and intermediate seller sectors

Participants	Ranking Attribution Factors						
	Function	Ease of use	Reliability	Durability	Design	Eco-friendly	Satisfaction
Gov.	1	2	3	3	5	7	5
Producer	2	5	1	3	6	7	4
Int. seller	2	6	1	5	3	7	4

Note that 1 means the attribution factor received the greatest scores on ranking and assumes to have the most influence on consumer buying decision, and 7 is the lowest score. Equally ranked numbers mean those attribution factors were exactly placed at the same total scores.

In addition in terms of average point (mean), the result of average point for each attribution on consumer buying decision varied among these three sectors. Table 3 below indicates the average point for each attribution evaluated by the government sector, producers/manufacturers, and intermediate sellers.

Table 3: Average point of attribution factors on consumer buying decision by government, producer/manufacturer, and intermediate seller sectors

Participants	Average Point of Attribution Factors						
	Function	Ease of use	Reliability	Durability	Design	Eco-friendly	Satisfaction
Gov.	7.0	5.3	4.7	4.7	2.7	1.0	2.7
Producer	4.75	3.5	6.75	4.5	3.25	1.25	4.0
Int. seller	6.42	3.58	7.0	4.25	6.08	2.08	5.58

Note that the average point of 7 means the attribution factor received the perfect/greatest scores and assumes to have the most influence on consumer buying decision and 1 is the lowest score; equally evaluated at the same average point by each sector means those attribution factors were exactly placed at the same total scores.

The governments and producers/manufacturers valued “function”, “reliability”, and “durability” as the most influential attributions on consumer buying decision, whereas intermediate sellers appraised “reliability”, “function”, and “design” as the most influential attributions. However, all three sectors agreed to evaluate “eco-friendliness” as the least influential one. Besides that, the government officials also ranked “function” and “eco-friendliness” with an absolute average point of 7 and 1; also many of attribution factors were evaluated at the same average points. These could imply that some of attributions evaluated by government officials have somewhat identical significance; unlike producers/ manufacturers and intermediate sellers, they evaluated each attribution distinctively. These could denote that each attribution has a diverse significance; in other words, the average points of attribution factors evaluated by the latter 2 sectors have a smaller variance, the variance for government is 4.04, for producers/ manufacturers 2.79, and for intermediate sellers 3.10. Variance, “the average of the squared differences from the mean” in this study refers to the “the average of the squared differences from the average point of attribution factor”.

In fact, the results in table 2 and table 3 show that the government, producers/manufacturers, and intermediate sellers strongly suppose “reliability” and “function” to have the utmost effect on overall consumer buying decision; in contrast, eco-friendly attribution factor should be the least influential one.

For the second question, “*what is/are other factor(s) that can be used to evaluate product quality?*” all three sectors similarly pointed out that “support service”, “value for money”, and “adaptability” could be the possible attribution factors in evaluating product quality. The three sectors refer to the term “support service” as the support attached to a product since the consumer walks into the store, makes a decision to buy or even not to buy, and after a product is bought. Although the support service attribution factor is intangible and a consumer cannot possess it, they can see and feel the support service. This kind of perception might have a strong impact on consumer decision and evaluation of product quality. Furthermore, as Thai consumers are very price sensitive, the attribution factor that possibly fits with today’s economics could be “value for money”; this includes the original price compared with other brands or companies who provide a similar type of product, the price of repairing parts, and the price of resell as second hand. Finally “adaptability” means that disregarding the particular brand and company, a product should be usable and adjustable with other brands; adaptability could be one of the potential attribution factors that consumers might consider when considering to buy a quality product.

Questionnaire Results: Out of 308 respondents, 144 were consumers of electronics and IT products, 77 were of automobiles, and 87 were of home appliances. In electronics/IT product’s responses alone, “function” played the most

influential role on their buying decision, followed by “reliability”, “design”, “durability”, “ease of use”, “customer satisfaction”, and “eco-friendliness”. Automobile product respondents gave a slightly different evaluation; for them, “durability” had the most effect on their purchasing decision but durability did not have a much larger weight effect than other attributions of “reliability”, “eco-friendliness”, “design”, “customer satisfaction”, “function” and “ease of use”. These attributions’ scores were insignificantly greater or lesser than one another. Similarly, “durability” and “reliability” were judged as the first and the second influential attributions by home appliance respondents, then “function” and “ease of use”, “eco-friendliness”, “design”, and lastly “customer satisfaction”. Table 4 shows the attribution factors on consumer buying decision ranking by consumers of the three different categories of products.

Table 4: Ranking attribution factors on consumer buying decision by consumers of electronics/IT products, automobiles, and home appliances

Respondents	Ranking Attribution Factors						
	Function	Ease of use	Reliability	Durability	Design	Eco-friendly	Satisfaction
IT	1	5	2	4	3	7	6
Auto.	6	7	2	1	4	3	5
Home App.	3	3	2	1	6	5	7

Recall 1 means the attribution factor received the highest ranking and assumes to have the most influence on consumer buying decision; equally ranked number by each product respondent means those attribution factors were exactly placed at the same total scores.

The result of the average point for each attribution on consumer buying decision was slightly different among these 3 products consumers. Table 5 shows the average point for each attribution evaluated by consumers of electronics/IT products, automobiles, and home appliances.

Table 5: Average point of attribution factors on consumer buying decision by consumers of electronics/IT products, automobiles, and home appliances

Respondents	Average Point of Attribution Factors						
	Function	Ease of use	Reliability	Durability	Design	Eco-friendly	Satisfaction
IT	5.47	3.92	4.39	3.94	4.19	2.26	3.84
Auto.	3.62	3.38	4.40	4.48	4.17	4.21	3.74
Home App.	4.16	4.16	4.36	4.75	3.56	3.61	3.46

Recall the average point of 7 means the attribution factor received the greatest scores and assumes to have the most influence on consumer buying decision; equally evaluated at the same average point by each sector means those attribution factors were exactly placed at the same total scores.

For electronics/IT products, the consumers agreed that “function” was the most important attribution at the average point of 5.47. This very high average point means the majority of electronics/IT product respondents favorably gave 5 and above points (6, 7) to the “function” attribution. Contrary to the automobile and home appliance products, the consumers viewed “durability” to be their first influential factor; however, the average points of these two respondents were not greater than the other 6 attributions, and instead all seven attributions were evaluated to have nearly the same weight. Furthermore in terms of variance, the variances of electronics/IT product, automobile, home appliance respondents were 0.9, 0.17, and 0.23, respectively. The attribution factors evaluated by respondents in the three product categories proved to have a roughly equal significance and influence on the consumers’ buying decision.

The results in table 4 and table 5 above indicate that consumer-purchasing (attribution) factors are varied and depend on each product category. However, still there is substantial evidence that “reliability” and “durability” are the

most influential attribution factors on consumer buying decision; unexpectedly “customer satisfaction” was the least influential one.

Also 177 consumers answered the question, “*What is/are other factor(s) that can be used to evaluate product quality?*” Similar to the first 3 sectors’ opinions, consumers specified that “support service” and “value for money” were the two most recorded factors that could be used in evaluating product quality. In addition, other potential factors might be “product guarantee”, “feedback and review from previous users”, “product description”, “net sales in the market”, “advertisement”, as well as “adaptability”. The consumers’ opinions reveal that secondary data such as feedbacks and reviews, performance of a product in the market and advertisement have certain significance on their perception, decision, and product quality evaluation.

Discussion

The prospect of product quality in Thailand: All of the interview participants and questionnaire respondents shared parallel thoughts and ideas on the question, “*What would product quality be in the next 5 years?*” The government representative, the Permanent Secretary of the Ministry of Industry of Thailand, said things around us are changing over the time and the needs of humans will certainly change accordingly. Consumers will definitely ask for more superior quality, quantity, usability, accessibility, and a better lifetime quality. Things will get more complicated. There will be many more players in the market; the market will open more for free competitions, and many crises will await us all-around.

In addition, the general manager and customer quality-engineering department of a large Japanese carmaker added that besides the improvement in product quality, the quality producers/manufacturers, and all stakeholders, will also improve. In very short years, the production process in all industries will require high technology, more creativity, and flexibility, and readiness for any changes. The producers/manufacturers have to fight in order to keep their costs down, enhance their services, and focus more on the society. These are the key activities that will increase their product quality as well as productivity, maintain the profits, and sustain their position, while they still can play compatibly with the laws and regulations.

The store general manager, of an electronics store in Chonburi, specified that a new generation product should satisfy the overall market and consumer’s expectations. Many aspects/factors will be taken into consideration and have effect on consumer buying decision. One of those would be the service; a business that gives better services will survive in the market. Interestingly the point that he and many intermediate sellers mentioned is a bit in contradiction with product development; a new breed product might not last long, as a product is composed of many parts and this is also a result of keeping the price down.

Last but not the least, the consumer’s opinion toward the prospects of product quality is very simple. It is mainly dealing with their feelings of expectation, experience, and satisfaction. They expect a better and higher quality product that answers their needs and fulfils their wants.

Considering all opinions together, in the next five years, the market may become very competitive; it may be fledged with numerous innovative products, better designs, and high technology resolutions at competitive prices in various accessible channels. Thus, consumers will become more selective and more concerned with details. They expect to see more improvement and additional values to a product quality. Therefore many participants and respondents believe that in the next five years, product quality will develop in various aspects; sophistication in both hardware and software, safety for human life, achieving international standards, delivering superior services, going

toward green concepts, higher efficiency with long term usability, and above all answering consumers' needs and exceeding consumers' expectations. Moreover, the future scope of product quality is not restricted to the final or ready to use outcomes, but product quality should improve throughout all processes. It should be a fair game that is good for the producer, buyer, user, society, and the ecosystem.

However, some participants and respondents argued that as product quality becomes more advanced by adding up new technologies, smaller size and lighter weight, containing many tiny chips and parts, product quality in the next 5 years, in term of durability, and life cycle may become shorter. Furthermore, quality itself might not develop as much as market expects; this is mainly due to an aggressive war price, reduction in production cost, and an increase in the sale turnover rate.

All in all, product quality will unquestionably differ from today and vary in many aspects, and it will somehow uphold on extension path; how far and how long will this continue or how deep it may fall onto a rough road, the future of product quality depends largely on all players.

Product Quality Definition: Different people view product quality differently and what could be a definition of product quality. The government officers, producers/manufacturers, intermediate sellers, and consumers gave their thoughts and opinions on this. Their precise product quality definitions are summarized as follows:

Regulators: To meet the standard, accomplish all requirements, follow rules and regulations, be harmless and fit with intended use, is the basis for product quality. However, only by meeting and achieving these fundamentals, the country's economy and manufacturing industry could not develop nor make any growth; firms possibly lose competitiveness, or there would be less value added to a product and consumer. Therefore, the government officials believe a good definition of product quality should comprise and outperform all those mentioned essences as well as generating additional value.

Market Suppliers: To deliver a product at the right "SPECCC" (safety, good performance, eco-friendliness, comfort in all aspects, consistency, and continuous improvement), and respond to consumer needs in time would be producers/ manufacturers and intermediate sellers' definition of product quality. However, as consumers value product quality and decide their purchase more based on feelings and perceptions, the two sectors agreed that support services would be another important component on the definition. Thus, a definition of product quality would be "SPECCC+RS".

Consumers: Meeting their needs and exceed their wants, value for money, excellence in both hardware and software, and brand recognition, are the important attribution factors and this is the definition of product quality given by Thai consumers.

Indeed, the regulator's product quality definition is an outline that guides how market suppliers should perform and what should be delivered to the consumers. The market supplier's definition is meeting up with the requirements and delivering the expectations. Last but not the least, the consumer's definition of quality is simple as meeting their needs and satisfying their wants.

Conclusion

A search for product quality definition in the case of Thailand has yielded significant results. First, *reliability*, *function*, and *durability* are the 3 most important attribution factors that have the most influence and effects on Thai consumers' buying decision. From the consumers' perspective, all the 7 attribution factors have approximately an equal weight and

influence on Thai consumers' buying decision. *Eco-friendliness* also has more impact on Thai consumers' buying decision than the regulators and market suppliers viewed.

Second, *support service, value for money, and adaptability* are additional attribution factors, which all sectors believed could be applied and have an effect on evaluating the Thai product quality. Third, *to meet quality standards and requirements, excellence in both hardware and software, supplement support service, continuous improvement, fitness with intended use, be economic and environmental friendly, satisfy consumer needs/wants and exceed consumer expectations* are common definitions of product quality defined by Thai regulators, producers/manufacturers of the products, intermediate sellers, and consumers.

In conclusion, a more precise definition of product quality in the 21st century in the case of Thailand is “*good in all aspects and fitness with intended use*”; *good in all aspects* implies good in both hardware and software, also economically, and environmentally, while *fitness with intended use* signifies the use in the regulator's perspective, use in the manufacturer's perspective, and use in the users' perspective.

By implementing the Thai product quality definition, regulators can ensure that market suppliers perform accordingly to the requirements as well as deliver additional values to fulfill the expectations that finally satisfy consumers' needs and wants, and create new experiences for the market and consumer.

Finally, this research has several limitations, some of which could serve as possible areas for future studies. First, the research interprets only three executive interviews with government officers, four executive interviews with producers/ manufacturers, and eleven executive interviews with intermediate sellers, and considers it as the overall 3 sectors' opinions. These participant numbers might not be significant enough to represent all three sectors population.

Second, the research does not imply other determinants such as gender, age, education, and monthly income in evaluating the effects of attribution factors on consumer buying decision. The result of the effects of attributions on the consumer decision might be inclusive. Third, the research does not assess the effects of attribution factors on product quality nor tests the validity of Thai product quality definition. It would be very interesting to test the effects on Thai product quality and to see the validity of the proposed product quality definition.

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