Customer Satisfaction Evaluation of Liner Shipping and Logistics Service by using Quality Function Deployment(QFD)

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論文内容の要旨

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論文題目（外国語の場合は，その和訳を併記すること。）

Customer Satisfaction Evaluation of Liner Shipping and Logistics Service by using Quality Function Deployment (QFD)

（QFD による定期船およびロジスティクスサービスの顧客満足度の評価に関する研究）

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（注）2，000 字～4，000 字でまとめること。

In Chapter one, we mention new service innovation and globalization challenge pattern of customer service. By reviewing the current development of liner and logistics service providers, we could recognize the important operational issues as well as customer service strategies. Through reading annual report regarding to the future strategy of major liner and logistics operators, we could understand their individual management style and how these decision making units take action to stay competitive based on their individual management philosophy. This research believes they all propose the most suitable strategy for their organization since the strength and weakness of service provider is different from one another.

As we have mentioned that the recent worse world economy situation forces the operators to propose appropriate policy in terms of scales economy, market restructure and differentiation to meet new customer's needs. It is urgently necessary to understand customers and work closely with them to enhance satisfaction since shipping market is not as optimistic as it used to be especially in East Asian region. Practitioners offer their own solutions according to their own experience or intuition to improve service quality to please clients but many issues still have disputation and need further discussion. Therefore, scientific decision making processes based on academic and practical literature to explore the appropriate strategies are proposed to investigate the suitable customer service. This dissertation may not provide the "best" strategy but aim to propose the "appropriate" strategy depend on the actual situation of service providers or decision making units.

In Chapter two, we introduce that QFD is an appropriate methodology to improve customer requirements and propose suitable technical measures for quality improvement. It is a mature methodology widely applied by manufactures, product design and process management. There are numerous researches which apply statistical application by collecting large number of random sampling surveys to identify key service quality gap for enhance customer satisfaction. Large number of surveys could provide meaningful statistical results but need to be further verified by explaining practical meaning for decision makers. On the other hand, few researches combine QFD and FAHP to explore liner shipping and logistics service in recent year. The feature of this combination is to point out key customer requirements as well as investigation the technical measures with regard to actual business application. The key customer requirements and technical measures calculated by this methodology should be reliable to reflect the voice of customer and define solution to achieve the proposed targets.

We summarize several results in Chapter three and Chapter four. First of all, though many major liner carriers already have systematic standard operating procedure, smaller or regional carriers may not have mature system or global standards to assure customers their service quality. When scale and organization get bigger, standards should be the key measure to assure promising efficiency and coordinated service performance. Second, exemption of terminal handling fee is good measure to offer better prices for shippers. Differentiation service could avoid liner carriers in a price war and provide value-added service to customers. Since shipping is an important part of customer's supply chain and facilitator of economy growth, the further involvement of customer's operation would help liner carrier always have information about their requirements.

Four key technical measures proposed for enhancement of customer satisfaction provide the direction for decision maker to rethink their strategies and allocate their limited budget or resource reasonably. Many major carriers strengthen their liner business through establishing subsidiary of logistics division or large amount of investment for infrastructure. "Yusen Logistics"is a typical example to emphasize the coordination of liner and logistics division with an aim to differentiate their customer service from their competitors. They aim to take advantage of their logistics capabilities to show their customers and investors the high quality delivery service. With the growing Asian market, more trades and business are expected to bring revenue to logistics service industry, so constantly improving quality of logistics service would definitely be the key weapon to gain comparative advantages as well as support liner business for enhancing client's satisfaction.

In Chapter five, we conclude the result and propose useful comments from several practitioners. The main value of this dissertation is to explore the customer service issues from academic and practical perspectives for the complimentary information to explain research findings. Experiential comments from executives could further contribute the gap of customer service we could not find in the academic study though their personal judgements may not have strong theoretical basis. But their perspectives may be valuable of considering customer service strategies for decision makers. There are several new and innovative issues regarding to the operations shipping and logistics industry such as CSR, environment, supply chain demand, strict security and cost management. The rapid improvement of technology, SCM, regulation and concept of management will also change customer requirement in very short time. Many issues and challenge is worth discussion for the future study.

（別紙１）　　論文審査の結果の要旨

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要　　旨

本論文は、QFD(Quality Function Deployment)を用いて定期船ならびにロジスティクスサービスに対する顧客満足度について研究したものである。論文構成とその概要は次の通りである。

第１章においては、研究の背景及び目的を説明した後、研究方法及び論文構成を述べている。

第２章は、分析方法について説明している。方法論的には、QFD とファジーAHP を組み合わせており、これによって古典的な QFD 適用の改善を図り、定量的に顧客満足度属性の相対的比重を計算し、技術的属性との関係が明確化されている。そのことで顧客満足度を高めるための技術的属性に優先順位が付けられるようになっている。

第３章は、定期船サービスに対する顧客満足度を前章の方法論を用いて分析している。定期船市場においてサービス品質がより重要なっている市場背景を述べた後、先行研究を通して顧客にとっての重要な定期船サービス属性について明らかにしている。アジアの定期船市場に限定して上記方法論が適用され、分析結果について具体的な会社を例示しながら考察を加えている。

第４章は、ロジスティクスサービスに対する分析である。経済のグローバル化とともにロジスティクスサービスがより重要となりつつある経済状況を紹介し、文献調査とヒアリング調査をもとにロジスティクスサービスにおける重要なサービス属性を抽出している。その後、第２章の方法論を適用して分析を行い、その結果をもとにロジスティクス会社のサービス品質改善について議論している。

第５章の結論においては、研究の成果、本研究が抱える問題点及び残された課題について言及している。特に、本研究の分析結果が実務的なレベルで有効かどうかについて、アジアの物流会社へのインタビュー結果等を踏まえながら議論している。

本研究の成果は、次の通りである。まず、方法論上、QFD にファジー型 AHP を導入することによって顧客満足度を改善するための技術属性を容易に順位付けがなされるという改良が行われたことである。定期船サービスに関する分析では、これまで議論し尽くされたサービス属性とは別に、ISO9001 の導入という属性が最も重要な役割を果たすことが明らかにされた。ロジスティクスサービスでは、ISO9001 の導入の他にオペレーションの開発、顧客との取引関係、SCM の統合といった属性が同レベルで重要であることが明らかになった。これらの結果はインタビューからも裏付けられており、実務的にも意義があり、また海運・物流研究にとってもその寄与は大きいといえよう。

このように本論文は、研究内容の新規性、独自性ならびに博士論文としての体裁等の観点から博士（海事科学）の学位を得る資格があると認める。

なお、本論文に関連する有審査論文は以下の４編（３編が第１著者、すべて英文）である。

1. Duru, O. **Huang, S. T.**, Bulut, E. and Yoshida S. (2013). "Multi-layer quality function deployment (QFD) approach for improving the compromised quality satisfaction under the agency problem: A 3D QFD design for the asset selection problem in the shipping industry," *Quality & Quantity*, Vol. 47, No. 4, pp. 2259-2280.
2. **Huang, S.T.**, Bulute, E., Duru, O. and Yoshida, S. (2013). "Service quality evaluation of international logistics company: an empirical case using QFD approach," *Journal of International Logistics and Trade,* Vol. 10, No. 3 pp. 31-54.

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3. **Huang, S.T.** and Yoshida. S. (2013). "Applying quality function deployment (QFD) approach to the study on improving service quality of logistics service: An empirical study of home delivery industry in East Asia," *International Journal of Transport and logistics*, Vol. 22, No. 23(in press).
4. **Huang, S.T.**, Bulute, E., Duru, O. and Yoshida, S. "Service quality assessment in liner shipping industry: An empirical study on Asian shipping case," *International Journal of Shipping and Transport Logistics*.(Accepted for publication)

また、口頭発表論文は、以下の２編の他に４編あり、すべて国際学会での報告である。

1. **Huang, S.T.**, Bulut, E., Duru, O. and Yoshida, S. (2013),"Service quality assessment based on customer satisfaction in international freight forwarding industry: An empirical study in East Asia," proceeding of IFSPA 2013 conference, Hong Kong Polytechnic University, Hong Kong.
2. **Huang, S.T.**, Bulut, E., Duru, O. and Yoshida, S. (2012), 'Service quality evaluation of international logistics company: an empirical case using QFD approach', proceeding of IAME 2012 conference, Taipei, Taiwan (Selected for special issue of Journal of International Logistics and Trade).