

**ICT TOOLS' DIFFUSION, DETERMINANTS, AND ITS
ECONOMIC PERFORMANCE ON SMALL-SCALE MOTORISED
FISHING BOATS IN KERALA: A CASE STUDY**

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Abstract

The new Information and Communication Technology (ICT) plays an important role in fishing and its related activities of Kerala marine sector. ICT tools such as GPS, mobile phone, echo sounder, wireless set (marine VHF radio) and beacon help the fishermen to increase fuel efficiency and income; reduces trip cost and fishing time. When we analyse the diffusion of technology in the marine sector, the capability of effective use of ICT tools by motorised fishermen poses an important challenge. The present study aims to understand the determining factors of adoption by assessing the usage level of ICT tools, and to study the benefits of their technology among small-scale motorised fishing sector. The study is based on both qualitative and quantitative research methods. The primary data was collected by using multistage random sampling method from five hundred registered motorised fishing crafts of six coastal districts of Kerala: Kozhikode, Malappuram, Alappuzha, Ernakulam, Kollam, and Thiruvananthapuram. Research methods such as logistic growth function, principal component analysis, and binomial logistic regression model were applied to analyse the research objectives of the study. Results show that the diffusion curves of ICT tools of all the coastal districts follow a *sigmoid shape* and proved the theoretical characteristics of the curve. The phase of rapid adoption of ICT tools among motorised crafts was observed during the period of 2007-2012. The study also found that, Alappuzha coastal district has the lowest adoption rates among all districts in the state. GPS was preferred as the most important ICT tool in terms of efficiency and income saving. Interpersonal communication (social interaction), role of government, and easy access of a tool are the three main determining factors of the adoption of ICT tools. The study findings support the *epidemic effect* (users to non-users) of diffusion theory in the sector. The odds ratio of logistic regression function of socioeconomic features shows that, the chance of occurrence of the adoption of an advanced ICT tool are five times for higher education (High school and above), five times for lower age (18-35), 15 times for more distance of fishing (>50 nautical miles), and 11 times for large craft

size. The study confirmed the influence of internal, external, and organisational factors for the adoption of ICT tools in the sector and revealed the positive relationship between the adoption index of ICT tools and revenue per trip of single day and multiday small-scale motorised crafts in the sector. The study refined the understanding of present usage capacity of advanced technologies of traditional small-scale motorised fishermen, which will help in developing various effective management policies in the future.