

Title: Exploring the factors influencing Mobile-based Ubiquitous System adoption in the Bangladesh RMG sector: A view through DOI and TOE

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Abstract: Relatively little is known about micro- and macro-level determinants of mobile phone ubiquitous system (MbUS) adoption by the manufacturing industry, such as is the case with the ready-made garment (RMG) industry in Bangladesh. This research closes this gap, by presenting the adoption factors of MbUS in RMGs through applying the Rogers' Diffusion of Innovation theory and technology, organization, environment framework, to explore individual, technological, organizational, and environmental determinants of MbUS adoption. The study also reports on critical country level-factors, organizational success factors and obstacles in MbUS adoption in RMGs. A qualitative method using interviews with the ready-made garment (RMG) factory owners, managers, employees, and IT experts, suggests technological readiness, easily understandable MbUS technology, RMG capability, government intervention, and a supportive regulatory environment, were found to be macro-level determinants of successful MbUS adoption. A survey was also conducted to explore the micro-level customer-centric factors, which found the relative advantages of MbUS, cost, the age of user's ($p < 0.000$), and influence on intention to use MbUS. This paper also identifies MbUS as a technical solution for time-critical information in RMGs, the competitive environment of RMGs, empowerment opportunities and countrywide demands to improve the RMG situation, are important adoption factors of MbUS rarely identified in prior literature. The findings will be of value to RMGs, government, and MbUS developers, to accelerate development of MbUS in Bangladesh. Furthermore, the findings have implications for other developing countries by improving the capacity of RMGs, while realizing their own development goals through mobile technologies.

Keywords: Mobile phone ubiquitous system (MbUS), Adoption factors, Ready-made garment (RMG) industry, Diffusion of Innovation theory, Technology–Organization–Environment (TOE) framework, Micro-level determinants

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