The readymade garment (RMG) sector is a fully export-oriented industry and Bangladesh is one of the largest RMG exporters in the world. It plays a pivotal role in the economy of Bangladesh by accounting for approximately 76% of the total export earnings and nearly 10% of GDP. This sector of Bangladesh has been expanding rapidly since the late 1970s. The sector employs a large number of people who labour in the production spaces of garments factory buildings throughout the day. The economic viability of this sector largely depends on the performance of the workers. Demanding compliance standards of buyers from various countries and a challenging energy supply and demand scenario in the sector poses questions of sustainability and building design. Appropriate illumination conditions of these production spaces, quality as well as quantity of lighting suitable for the production processes, is a major requirement of a proper working environment. Industrial processes in such indoor environments are becoming highly complex; workers working under poor lighting conditions are usually exposed to a range of visual problems with operating machines, textile sewing activities, ironing and other activities. Visual comfort for various illumination levels has impact on total physical comfort condition and any physical discomfort influences the human behaviour and their work efficiency. Eventually, the visual comfort of these workers becomes a significant issue which is based upon determining the suitable range of illumination levels available on the work plane.

The objective of this paper is to document the illumination condition and identify its effect on the work efficiency in production spaces of RMG sector and to investigate standard illumination levels and conditions for maximum work efficiency of the RMG workers in the production spaces of RMG buildings in context of Dhaka, Bangladesh. Physical surveys are conducted with detailed experimental study of the selected RMG production spaces on illumination conditions and the actual performance of the workers from factories in Dhaka region. Work efficiency is recorded through observing the number of defects in production and user feedbacks are achieved through structured questionnaire survey. The research focuses on causality to identify the effects of the illumination condition of production spaces on the work efficiency and to recommend illumination ranges that would facilitate optimum work efficiency.

**Key words:** Illumination Condition, Work Efficiency, Production Space, Visual Comfort, Readymade Garments.