The creation of Jobs in manufacturing sector has of late emerged as a major challenge for policy makers in India especially in the context of labor market rigidity which manifests in the form of low absorption of permanent workers due to prevalence of employment protection legislations (such as IDA and CW act) and less skill formation amongst workers. Both of these poses serious problem for enhancement of labor as well as multifactor productivity at the firm level. The present paper using firm level data for the period 2008-15 undertakes an analysis of whether increasing usage of contract workers impacts productivity and additionally if labor quality is a determinant of productivity growth. Using a difference in difference econometric approach for the entire Indian organized manufacturing at the firm level, the paper offers several interesting findings. Increased usage of contract workers turns out to be significant in lowering productivity and more so in case of labor intensive manufacturing. In addition the labor quality accounts for improving productivity- level of education is by far the crucial variable in impacting productivity at the firm level thereby reflecting the role of skills in enhancing productivity.