AHW that improves the results than the existing BPNN. The R^2 does not provide any improvement in its results. The proposed method's advantage is that the model can update itself at certain time intervals as newer data enters the system. Finally, it can be concluded that the proposed method can be used for improving the prediction of annual automobile sales in India.
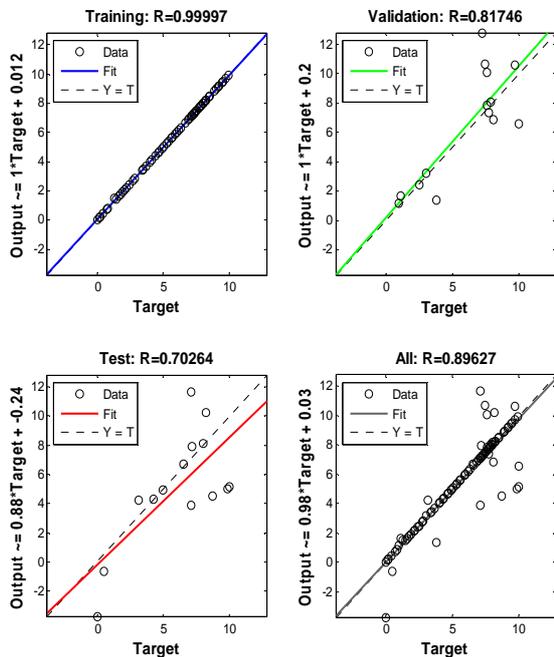

Fig. 5 Results of Regression Plot using existing method

IV. CONCLUSION

This paper proposes a novel integrated model using the combination of AHW with BPNNs to forecast the sales in automobile industry based on the collected data from manufacturing companies in India. The results indicate that the proposed model serves a better job in improving future automobile industry sales than the conventional methods. The proposed model has the higher capability of providing reasonable accuracy in forecasting future sales in terms of average prediction accuracy (0.974637) than the existing methods namely BPNN (0.9483) and ANN (0.9275). Further, the MSE of the proposed method during training and testing is lesser than the existing BPNN. Finally, the regression fit shows that the proposed integrated model is accurate during the testing phase in predicting the automobile sales data for the year 2016-2017 and 2017-2018 than the conventional system. Further, even if the market is fluctuating the AHW sets the pattern or weights required to increase the forecasting ability of BPNN, as it tunes the results of BPNN.

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