

CHAPTER 5

CONCLUSION AND SUGGESTION

This chapter will be separated into three parts. Firstly, the statistical model will be concluded. Secondly, the result will be shown into graphical model. Both parts are also separated to explain the mottling perception of customer and printer. Finally, the third part is suggestion of this research.

5.1 Conclusion of Statistical Results

From equation 4.1 and 4.2, it means that the probability of the customer and printer observers to see the print mottle depend on illumination and mottle index.

The negative sign of the parameter means PROB (dependent variable) and MI, ILLUM (independent variables) have negatively relationship. In other word, it shows that if the illumination and mottle index decrease, probability of customer and printer to see the print mottle increase.

If we go back to the customer statistical result, MI decrease by 1%, PROB will increase by 0.68% ($0.68 = 1.579 - 0.893$). Assuming the illumination is constant. By the way, if ILLUM decrease 1%, PROB will increase by 1.578% ($1.578 = 1.579 - 0.00032$), MI is constant.

Same as above, for the printer statistical result, MI decrease by 1% PROB will increase by 0.77% or if illumination decrease by 1%, PROB increase by 1.33%.

Conclusion for statistical results.

5.1.1 Statistical model show clearly that MI and ILLUM have negative relationship. If mottle index and illumination are high (print quality is low). Customers and Printers can see the print mottle, PROB will be low.

5.1.2 The difference between printers and customers, both of them can realized the actual print quality (Mottle index) in difference illumination. We can see from the parameter of MI for customers and printers are 0.893 and 0.554 respectively.

The parameter for MI is higher than ILLUM (0.0032 and 0.0034). Therefore, mottle index has more significant to the customer and printer comparing with the illumination.

Surprisely, the illumination effect for customer and printer is nearly the same. The parameter for illumination, 0.00032 and 0.00034 for customer and printer, are hardly difference.

On the other hand, the change in mottle index for customers and printers are 69% and 77%, this means printer can notice the print mottle higher than the customer, may be because the printer is more familiar with the quality of print matter than those for the customer.

5.2 Graphical Analysis

From figure 5-1 and 5-2, we can see the difference of slope between customer and printer. The customer model have more slope line. Same as the result from statistical model, the graph can show us that customers response to the illumination more than printers.

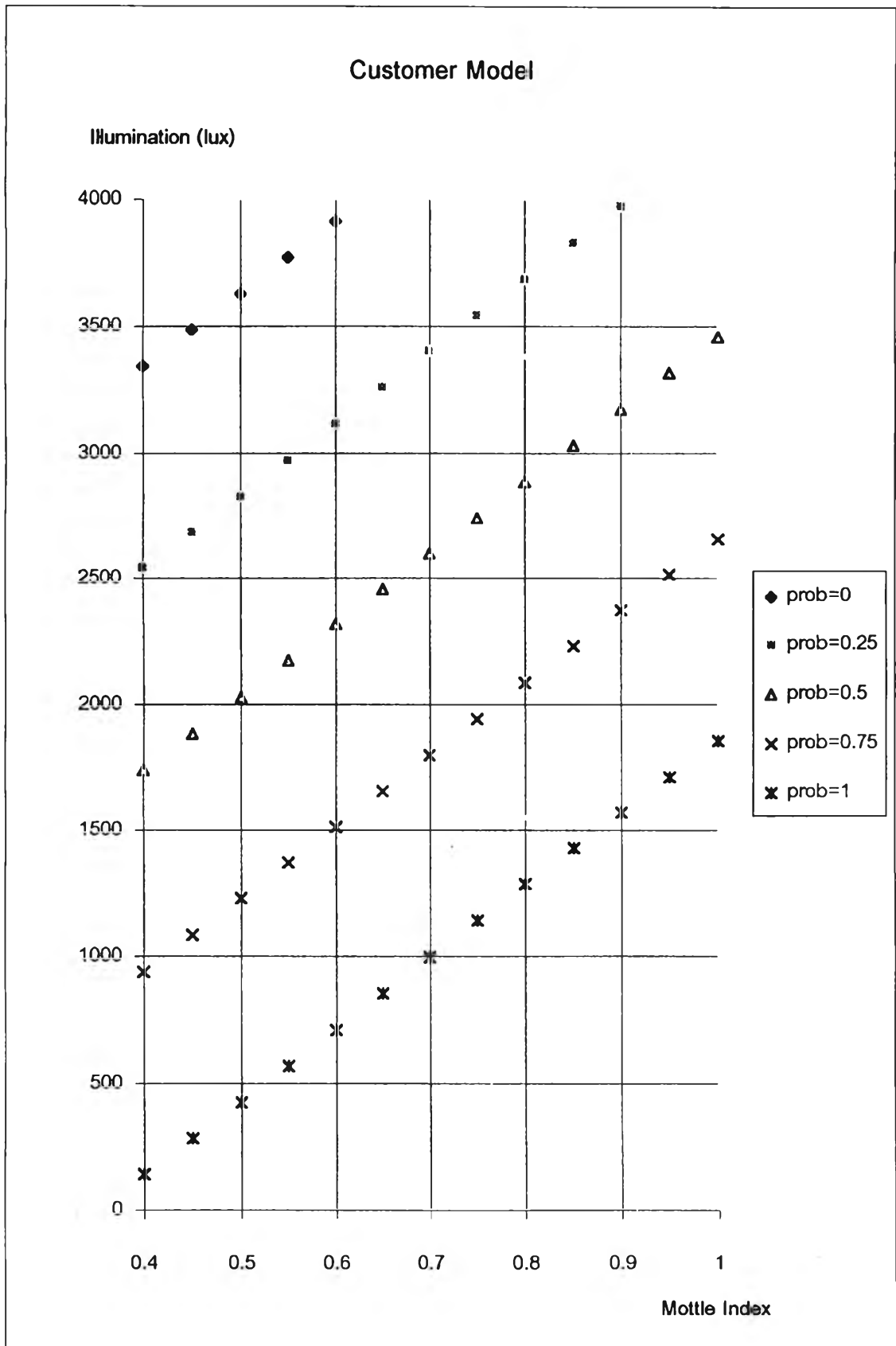


Figure 5-1 Customer graphical model

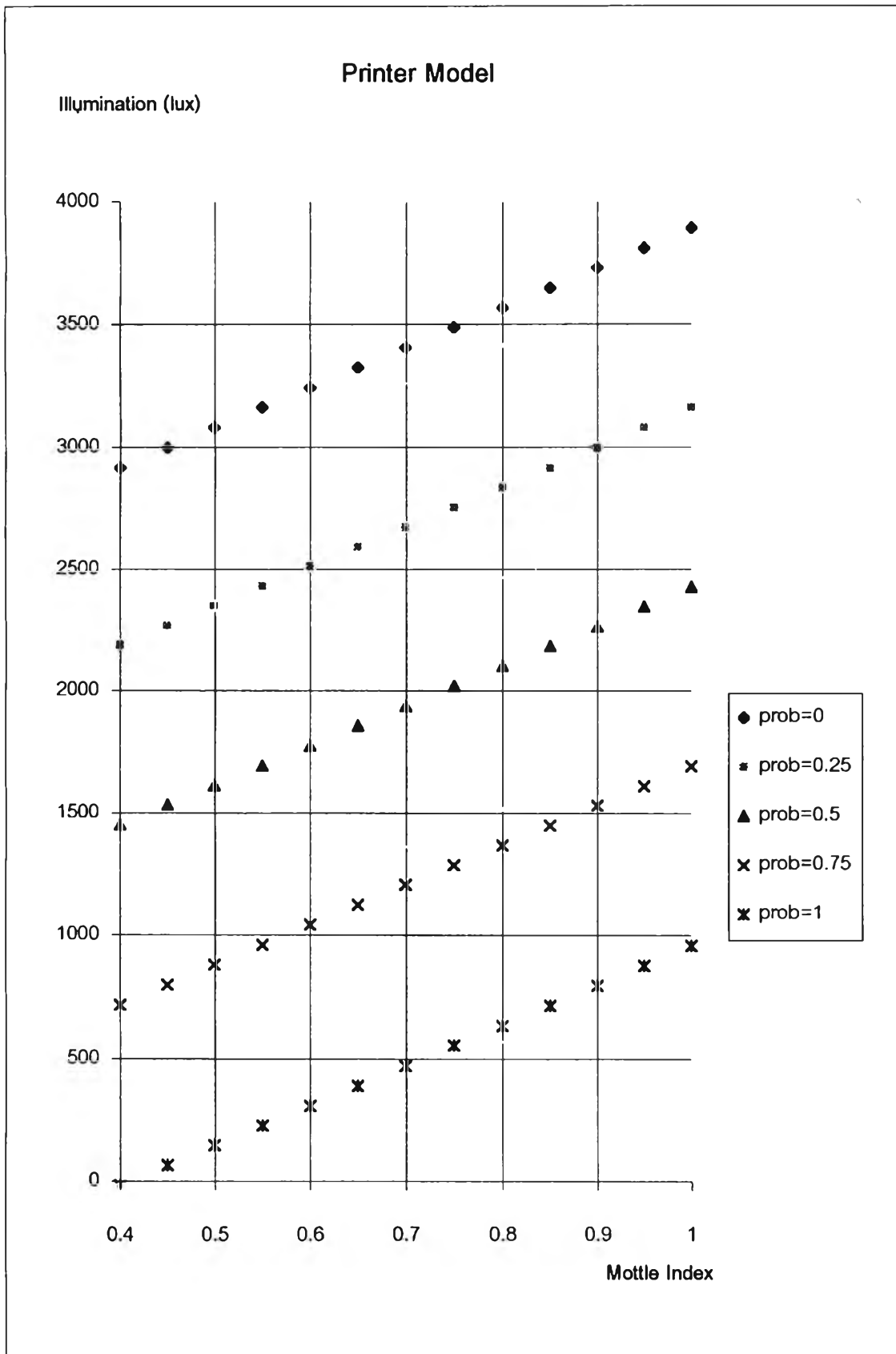


Figure 5-2 Printer graphical model

In other word, customers can notice the print mottle more depending on illumination. They can see the print mottle much better in high illumination. On the other hand, illumination has not much effect to the perception of printer. They can see well even they see it in low illumination. The mottle index, which is actual print quality, has more effect to the printer even in low illumination. For example at $PROB = 0.5$ and $ILLUM = 2000$, printers can notice mottle index range 0.4 - 0.7. In the mean time, at $PROB = 0.5$ and illumination equal to 2000, customers can notice mottle index range 0.4 - 0.5 only.

Finally, the perception of human, printer and customer, to the print quality is difference. Printers which familiar with print quality, can notice the different much better than the customers.

5.3 Suggestions

There are other parameters affecting the print mottle which should be further investigated, such as the color of sample, the source of light and the printing process. We find that all of them can affect the human perception. However, we used the experimental design for those particular parameters.

In the present research, we used only one technique called area method to determine the mottle values which differ from the other experiments. However, it would be useful to extend the measurement of the mottle values to using other techniques. This may give the better result that can present the mottle perception in the region of varied illumination.