CHAPTER 6
CONCLUSION AND RECOMENDATION

6.1. Conclusion

Analysis problem in Laresolo Tea House has been conducted using simulation method and the result of this simulation was that all tea must be ordered if the stock less than equal to the reorder point. Not only the number of reorder point, but also based on the result of simulation can be obtained the best number of order quantity for each tea by considering the lost quantity, expired quantity and capacity of storage. All number of quantity is the multiply of lot size of each tea. In terms of the costs, the simulation total end cost of inventory is lower than the actual. The total end cost of inventory in simulation per year is Rp 27.458.497 then in the actual system per year is Rp 42.000.000 so it has different around Rp 14.349.043.

Based on the calculation in scenario 2 which is design a situation where the Laresolo should order the tea still in a package (lot size) to achieve the quantity target which is according to storage capacity, but the total cost is higher than the other scenario. It is proved that Laresolo Tea House is better to not order the tea in a large number in one time.

6.2. Recomendation

Laresolo Tea House does not have a policy about inventory system for the tea. Therefore it is recomended to used the scenario 3 (combination of Reorder Point and Order Quantity) which is using 100 grams for eight special tea. This scenario will lead to achieve the minimum total cost of inventory without over the capacity of storage.

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APPENDICES

APPENDIX 1

Validation Result for All Item

1. Validation of Java Glogg

	Variable 1	*Variable 2*
Mean	0,143529	0,169411765
Variance	0,193973	0,221231964
Observations	425	425
Pooled Variance	0,207603	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,82807	
P(T<=t) one-tail	0,203932	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,407864	
t Critical two-tail	1,962765	

2. Validation of Ginger Tea

	Variable 1	*Variable 2*
Mean	0,42117647	0,4282353
Variance	0,51794673	0,4954273
Observations	425	425
Pooled Variance	0,50668701	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,1445579	
P(T<=t) one-tail	0,44254713	
t Critical one-tail	1,6466525	
P(T<=t) two-tail	0,88509427	
t Critical two-tail	1,9627654	

3. Validation of Indian Spices

	Variable 1	*Variable 2*
Mean	0,576471	0,56
Variance	0,735294	0,704528
Observations	425	425
Pooled Variance	0,719911	
Hypothesized Mean Difference	0	

Df	848	
t Stat	0,282976	
P(T<=t) one-tail	0,388632	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,777265	
t Critical two-tail	1,962765	

4. Validation of Apple Cinamons

	Variable 1	*Variable 2*
Mean	0,489412	0,48
Variance	0,670289	0,665283
Observations	425	425
Pooled Variance	0,667786	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,167893	
P(T<=t) one-tail	0,433354	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,866708	
t Critical two-tail	1,962765	

5. Validation of BOP Lemon Peel

	Variable 1	*Variable 2*
Mean	0,36	0,338824
Variance	0,631887	0,531154
Observations	425	425
Pooled Variance	0,581521	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,404809	
P(T<=t) one-tail	0,34286	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,68572	
t Critical two-tail	1,962765	

6. Validation of BOP Lemon Juice

	Variable 1	*Variable 2*
Mean	1,496471	1,098824
Variance	12,68926	5,905305
Observations	425	425
Pooled Variance	9,297281	
Hypothesized Mean Difference	0	
Df	848	
t Stat	1,901075	
P(T<=t) one-tail	0,028815	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,057631	
t Critical two-tail	1,962765	

7. Validation of Lychee Tea

	Variable 1	*Variable 2*
Mean	0,249412	0,235294
Variance	0,414062	0,369034
Observations	425	425
Pooled Variance	0,391548	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,328889	
P(T<=t) one-tail	0,37116	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,742321	
t Critical two-tail	1,962765	

8. Validation of Dutch

	Variable 1	*Variable 2*
Mean	0,270588	0,261176
Variance	0,400666	0,419834
Observations	425	425
Pooled Variance	0,41025	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,214203	
P(T<=t) one-tail	0,41522	
t Critical one-tail	1,646653	

P(T<=t) two-tail	0,83044	
t Critical two-tail	1,962765	

9. Validation of Earl Grey

	Variable 1	*Variable 2*
Mean	0,183529	0,148235
Variance	0,19737	0,159578
Observations	425	425
Pooled Variance	0,178474	
Hypothesized Mean Difference	0	
Df	848	
t Stat	1,217852	
P(T<=t) one-tail	0,11181	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,223619	
t Critical two-tail	1,962765	

10. Validation of Teh Tarik

	Variable 1	*Variable 2*
Mean	3,004706	3,056471
Variance	14,40564	11,35058
Observations	425	425
Pooled Variance	12,87811	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,21027	
P(T<=t) one-tail	0,416752	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,833504	
t Critical two-tail	1,962765	

11. Validation of Golden Angel

	Variable 1	*Variable 2*
Mean	0,056471	0,072941
Variance	0,058124	0,06778
Observations	425	425
Pooled Variance	0,062952	
Hypothesized Mean	0	

Difference		
Df	848	
t Stat	-0,95694	
P(T<=t) one-tail	0,169436	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,338872	
t Critical two-tail	1,962765	

12. Validation of Sparkling Grey

	Variable 1	*Variable 2*
Mean	0,084706	0,065882
Variance	0,134317	0,099423
Observations	425	425
Pooled Variance	0,11687	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,802655	
P(T<=t) one-tail	0,2112	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,422399	
t Critical two-tail	1,962765	

13. Validation of Spicy Orange

	Variable 1	*Variable 2*
Mean	0,117647	0,124706
Variance	0,193674	0,23677
Observations	425	425
Pooled Variance	0,215222	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,2218	
P(T<=t) one-tail	0,41226	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,82452	
t Critical two-tail	1,962765	

14. Validation of Golden Champagne

	Variable 1	*Variable 2*

Mean	0,108235	0,145882
Variance	0,17222	0,247536
Observations	425	425
Pooled Variance	0,209878	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-1,19792	
P(T<=t) one-tail	0,115642	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,231284	
t Critical two-tail	1,962765	

15. Validation of Persian Bites

	Variable 1	*Variable 2*
Mean	0,108235	0,098824
Variance	0,153352	0,13172
Observations	425	425
Pooled Variance	0,142536	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,363403	
P(T<=t) one-tail	0,358197	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,716395	
t Critical two-tail	1,962765	

16. Validation of Indonesian Breakfast

	Variable 1	*Variable 2*
Mean	0,058824	0,075294
Variance	0,079079	0,102808
Observations	425	425
Pooled Variance	0,090943	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,79616	
P(T<=t) one-tail	0,21308	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,426159	

t Critical two-tail	1,962765	

17. Validation of Lady Marisa

	Variable 1	*Variable 2*
Mean	0,061176	0,054118
Variance	0,07172	0,056027
Observations	425	425
Pooled Variance	0,063873	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,407147	
P(T<=t) one-tail	0,342001	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,684003	
t Critical two-tail	1,962765	

18. Validation of Oriental

	Variable 1	*Variable 2*
Mean	0,032941	0,023529
Variance	0,036648	0,02303
Observations	425	425
Pooled Variance	0,029839	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,794251	
P(T<=t) one-tail	0,213636	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,427271	
t Critical two-tail	1,962765	

19. Validation of Tropical

	Variable 1	*Variable 2*
Mean	0,032941	0,042353
Variance	0,036648	0,050089
Observations	425	425
Pooled Variance	0,043368	
Hypothesized Mean Difference	0	

Df	848	
t Stat	-0,65881	
P(T<=t) one-tail	0,255097	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,510193	
t Critical two-tail	1,962765	

20. Validation of Teh Poci Keraton

	Variable 1	*Variable 2*
Mean	1,197647	1,105882353
Variance	2,456127	2,061875694
Observations	425	425
Pooled Variance	2,259001	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,890014	
P(T<=t) one-tail	0,186855	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,373711	
t Critical two-tail	1,962765	

21. Validation of Fragnance of Love

	Variable 1	*Variable 2*
Mean	0,46588235	0,4188235
Variance	0,62206437	0,602475
Observations	425	425
Pooled Variance	0,6122697	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,87669625	
P(T<=t) one-tail	0,19044996	
t Critical one-tail	1,6466525	
P(T<=t) two-tail	0,38089993	
t Critical two-tail	1,9627654	

22. Validation of Mint Green Tea

	Variable 1	*Variable 2*
Mean	0,449412	0,36

Variance	0,592364	0,537547
Observations	425	425
Pooled Variance	0,564956	
Hypothesized Mean Difference	0	
Df	848	
t Stat	1,734071	
P(T<=t) one-tail	0,041634	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,083269	
t Critical two-tail	1,962765	

23. Validation of Honey Green Tea

	Variable 1	*Variable 2*
Mean	0,609412	0,597647
Variance	0,894251	0,821221
Observations	425	425
Pooled Variance	0,857736	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,185176	
P(T<=t) one-tail	0,426568	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,853136	
t Critical two-tail	1,962765	

24. Validation of Apple Mint

	Variable 1	*Variable 2*
Mean	0,275294	0,294118
Variance	0,412242	0,580744
Observations	425	425
Pooled Variance	0,496493	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,38943	
P(T<=t) one-tail	0,34853	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,697059	
t Critical two-tail	1,962765	

25. Validation of Mango Delight

	Variable 1	*Variable 2*
Mean	0,294118	0,305882
Variance	0,354329	0,368479
Observations	425	425
Pooled Variance	0,361404	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,28528	
P(T<=t) one-tail	0,387751	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,775503	
t Critical two-tail	1,962765	

26. Validation of Green Tea Latte

	Variable 1	*Variable 2*
Mean	1,171765	1,174118
Variance	2,274673	2,497913
Observations	425	425
Pooled Variance	2,386293	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,0222	
P(T<=t) one-tail	0,491145	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,982291	
t Critical two-tail	1,962765	

27. Validation of Green Tea Frappe

	Variable 1	*Variable 2*
Mean	0,581176	0,482353
Variance	0,866626	0,707825
Observations	425	425
Pooled Variance	0,787225	
Hypothesized Mean Difference	0	
Df	848	
t Stat	1,623642	

P(T<=t) one-tail	0,052412	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,104824	
t Critical two-tail	1,962765	

28. Validation of Green Tea Shake

	Variable 1	*Variable 2*
Mean	0,221176	0,202353
Variance	0,436815	0,3599
Observations	425	425
Pooled Variance	0,398357	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,434755	
P(T<=t) one-tail	0,331926	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,663851	
t Critical two-tail	1,962765	

29. Validation of Green Mile

	Variable 1	*Variable 2*
Mean	0,468235	0,381176
Variance	0,740144	0,543041
Observations	425	425
Pooled Variance	0,641593	
Hypothesized Mean Difference	0	
Df	848	
t Stat	1,584392	
P(T<=t) one-tail	0,056739	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,113477	
t Critical two-tail	1,962765	

30. Validation of Java Ocha

	Variable 1	*Variable 2*
Mean	0,204706	0,145882
Variance	0,262242	0,190932
Observations	425	425

Pooled Variance	0,226587	
Hypothesized Mean Difference	0	
Df	848	
t Stat	1,801412	
P(T<=t) one-tail	0,035997	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,071993	
t Critical two-tail	1,962765	

31. Validation of Silver Needle

	Variable 1	*Variable 2*
Mean	0,211765	0,192941176
Variance	0,294673	0,335327414
Observations	425	425
Pooled Variance	0,315	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,488906	
P(T<=t) one-tail	0,312517	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,625035	
t Critical two-tail	1,962765	

32. Validation of Blooming Tea

	Variable 1	*Variable 2*
Mean	0,22823529	0,2141176
Variance	0,33221976	0,3196115
Observations	425	425
Pooled Variance	0,32591565	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,36048665	
P(T<=t) one-tail	0,35928651	
t Critical one-tail	1,6466525	
P(T<=t) two-tail	0,71857301	
t Critical two-tail	1,9627654	

33. Validation of Gingseng Oolong

	Variable 1	*Variable 2*
Mean	0,075294	0,065882353
Variance	0,079223	0,075837958
Observations	425	425
Pooled Variance	0,077531	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,492736	
P(T<=t) one-tail	0,311163	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,622327	
t Critical two-tail	1,962765	

34. Validation of Ti Kuan Yin

	Variable 1	*Variable 2*
Mean	0,07294118	0,0658824
Variance	0,07721421	0,075838
Observations	425	425
Pooled Variance	0,07652608	
Hypothesized Mean Difference	0	
Df	848	
t Stat	0,37196926	
P(T<=t) one-tail	0,35500433	
t Critical one-tail	1,6466525	
P(T<=t) two-tail	0,71000867	
t Critical two-tail	1,9627654	

35. Validation of Puerh 7 Tahun

	Variable 1	*Variable 2*
Mean	0,023529	0,04
Variance	0,02303	0,038491
Observations	425	425
Pooled Variance	0,03076	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-1,36897	
P(T<=t) one-tail	0,085686	
t Critical one-tail	1,646653	

P(T<=t) two-tail	0,171372	
t Critical two-tail	1,962765	

36. Validation of Thai Tea

	Variable 1	*Variable 2*
Mean	1,804706	1,931764706
Variance	7,982997	16,62976693
Observations	425	425
Pooled Variance	12,30638	
Hypothesized Mean Difference	0	
Df	848	
t Stat	-0,52798	
P(T<=t) one-tail	0,298825	
t Critical one-tail	1,646653	
P(T<=t) two-tail	0,59765	
t Critical two-tail	1,962765	

.

APPENDIX 2

Photos of Pack of Tea per Lot Size

1. Pack of Tea in 500 grams

2. Pack of Tea in 400 grams

3. Pack of Tea in 100 grams

4. Pack of Tea in 75 grams

5. Pack of Tea in 50 grams