



Inspiring Excellence

Internship Report on

“Restructuring of Distribution System of Akij Food and Beverage Ltd
in Dhaka City”

Submitted To:

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Program: BBA

Major: Operations and Supply Chain Management

BRAC Business School, BRAC University

Date of Submission: December 17, 2018

“Restructuring of Distribution System of Akij Food and Beverage Ltd in Dhaka City”



Akij Food & Beverage Ltd.

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(A concern of **Akij Group**)



Letter of Transmittal

December 17, 2018

Md. Hasan Maksud Chowdhury

Associate Professor

BRAC Business School, BRAC University

Subject: Submission of the Internship Report on “Restructuring of Distribution System of Akij Food and Beverage Ltd in Dhaka City”

Dear Sir,

It is my great pleasure to submit you my internship report on “Restructuring of Distribution System of Akij Food and Beverage Ltd in Dhaka City”. I have completed my internship program in Akij Food & Beverage from 15th October 2018 to 15th January 2019 as a part of my BBA Program. I have tried myself to explain my learning and experience what I have gathered from my internship program briefly in this report.

I realize that this approach really contributes in giving my course learning a lasting shape in me. The whole report is based on my practical and field experience within this company. I have putted my best effort in completing the report with all the information that I have collected during my stay in Akij Food & Beverage.

I have great hope that the report will meet your expectation and my academic requirement and aid you in getting a clear idea about the subject.

Sincerely,

.....

Kazi Imran Sharif

ID: 14304107

Program: BBA

BRAC University

Letter of Endorsements

The internship report entitle “Restructuring of Distribution System of Akij Food and Beverage Ltd in Dhaka City” has been submitted to BRAC Business School, for the purpose of completing the degree of Bachelor of Business Administration, by Kazi Imran Sharif, Id: 14304107, major in Operations and Supply Chain Management. The report has been accepted and will be presented to the internship defense committee for evaluation.

I wish success and prosperity of his career and life.

Md. Hasan Maksud Chowdhury

Associate Professor

BRAC Business School

BRAC University

Acknowledgement

The theoretical knowledge that is gathered from the educational institution is not sufficient to be aware the subject matter rather the practical knowledge. In order to resolve the dichotomy between these two areas, I was assigned as an intern in Akij Food & Beverage.

At the exceedingly beginning, I would like to convey my cordial gratitude to almighty Allah for giving me the strength and the self-possession to terminate the assigned job within the schedule time. I would like to reimburse my profound respect to my supervisor Md. Hasan Maksud Chowdhury, Associate Professor, BRAC Business School, BRAC University, due to his generous and gracious guidance. I am also grateful to him for helping me to understand some miniature issues as well as those issues, which I have failed to understand during the preparation of the report. At the same time, I also pay my heartily gratitude to Mr. Mohammed Shafiqul Islam (Manager of Supply Chain), Mr. Nazim Uddin Patwary (Manager Distribution), Mr. Tanvir Ahamed Sarkar (Sr. Executive, Supply Chain), Mr. Shakil Mohammad Imtiaz (Sr. Executive, Distribution) of Akij Food & Beverage who's were extended their helping hands by showing the right and effected path to mean by motivating me to implement my theoretical knowledge of Supply Chain Management at Akij Food & Beverage.

Finally, I humbly appreciated the endurance & assistance of the entire work force of Akij Food & Beverage, for their time in making me able to complete my Internship Report. I have tried to prepare this report accurately. However, there might be some errors or mistakes. So, I seek your kind consideration as I am in the process of learning.

Executive Summary

Being an intern of supply chain of Akij Food and Beverage Limited, I have chosen the topic base on my job responsibilities and interested area which is titled as “Restructuring distribution system in Dhaka city of Akij Food and Beverage Limited”. Akij food and beverage is one of the leading Fast-Moving Consumer Goods (FMCG) companies in Bangladesh. This report introduced a new Restructuring distribution plan for Akij Food and Beverage Limited in Dhaka city. Moreover, details distribution plan, dealer point’s forecasted daily demand and the distribution cost have been introduced in the report. In the details distribution plan there is in depth description from where the company will distribute the product, what will the capacity of the truck and how many trucks will be required to distribute in Dhaka city. After comparatively analyzing the existing distribution cost with proposed distribution system try to find out how much cost efficient of proposed distribution system is. Therefore, I have tried to utilize my theoretical, conceptual and three months’ work experience in supply chain to prepare the “Restructuring distribution system in Dhaka city of Akij Food and Beverage Limited”.

Table of Contents

1. Organizational Overview.....	1
1.1 Introduction	1
1.2 History of Akij Group.....	1
1.3 Mission and Vision.....	2
1.4 Board of Directors of AFBL.....	2
1.5 Product Offerings	2
1.6 Product Quality.....	4
2. Introduction to the Study	5
2.1 Rationale of the Study	5
2.2 Statement of the Problems	5
2.3 Scope and Delimitation of the Study.....	5
2.4 Objective of the report.....	6
3. Review of Related Literature.....	6
4. Limitation	7
5. Methodology of Study	7
5.1 Analysis tools	8
6. Descriptive analysis and Interpretation	8
6.1 Primary Route Planning.....	8
6.2 Proposed alternative specific route planning:.....	10
6.3 Distribution Cost:	23
7. Relative Analysis and Findings of the study	25
8. Recommendation	26
9. Conclusion	28
10. Bibliography	29

11. Appendix A: Proposed Distribution Model.....30
Appendix B: Notes and Calculation32

1. Organizational Overview

1.1 Introduction

Akij food and beverage ltd started their journey in 2006 as a unit of Akij group. AFBL produce a wide range of Snacks and Beverage of both National & International market. AFBL is a \$70 million project which was provided by Akij group. First production capacity was 400 bph in the carbonated soft drinks line and 300 bph in the juice line. Within a span of one and a half years it has increased capacity to 1800 bph. Now the capacity of production is at the ground breaking rate of 1900 bph. Most of our brands are leading brands in Bangladesh among these SPEED is the most famous energy drinks brand in the market. AFBL is very conscious about their quality of product and there is no compromise in terms of quality of product. To manufacturing the food and beverage product AFBL used automated machineries which are mainly imported from German. Even they imported machineries from world famous Tetra Pak, Cronos ect.

1.2 History of Akij Group

Akij Group stretches back to later part of the forties. In its infancy, the Group started in humble way with jute trading which was known as the golden fiber of the country, earning highest amount of foreign exchange. Akij Group's ceaseless efforts with dynamic management and support from our numerous clients have led our Group in diversifying its business activities. In the second phase, the Group went into manufacturing handmade cigarettes popularly known as bidis. This sector gave a real boost to the revenue earning of the Group as well as making a substantial contribution to government exchequer.

The legacy of AKIJ GROUP is over half a century old and over the years Akij has established itself as the full of confidence and much revered industrial family of Bangladesh. Akij Group is one of the biggest conglomerates in Bangladesh. It consists of 24 big concerns with diverse activities & different products. Akij Group launched its venture as a small jute trader more than 50 years ago. Since then it has been progressing with tremendous pace in the industrial area of Bangladesh. A large number of people are employed by the group and cared for as members of the Akij family. The non-profit concerns are also involved in sustaining development of the country & for social welfare.

1.3 Mission and Vision

In this era of mass production, as it is very hard to stand out with one product, Akij Group focuses on making the best in all sectors. Any company's vision is actually the dream to which the company always strives to reach where it may become possible or not. Akij Group is not something different. Expanding the business in the abroad and becoming one of the market leaders internationally are the visions of Akij Group. The mission of Akij Group is to be the market leader through their best effort, suitable and competitive marketing strategy and the consumers support. Now they are in the position of challenger and their vision focuses on those missions, goals and objectives which will make them able to be the leader from the challenger to the leader in the market.

1.4 Board of Directors of AFBL

These people are Body who represents the AFBL (Akij Food & Beverage Ltd, 2018)

- SK. Nasir Uddin, Chairman, AFBL
- SK. Bashir Uddin, Managing Director, AFBL
- Sk. Jamil Uddin, Corporate Director, AFBL
- SK. Jashim Uddin, Corporate Director, AFBL
- SK. Shamim Uddin, Corporate Director, AFBL

1.5 Product Offerings

At present Akij food and beverage ltd is offering diversified product in Bangladesh as well as in the foreign market. Day by day Akij food and beverage is gaining popularity among the people. Speed is the most popular and revenue generated product of Akij food and beverage. The demand of Aafi juice is too high in the foreign market that's why the company can't supply in local market as far market demand. The products which are offering now by the company are given bellow:

Product Category	Brand Name	SKU(stock keeping unit)
Cola	Mojo	250ml pet and can, 500ml pet, 1liter pet and 2 liter pet.
Diet Cola	Mojo Light	250 ml Pet and Can
Cloudy Lemon	Lemu	250ml pet and can, 500ml pet, 1liter pet and 2 liter pet
Orang Drink	Twing	250ml, 500ml, 1 liter
Clear Lemon	Clemon	250ml pet and can , 500ml pet, 1liter pet and 2 liter pet.
Energy Drink	Speed	250ml pet and Can
Juice	Frutika, Aafi	250ml pet and 1 liter
Malt Beverage	Wild Brew	250ml can.
Chips	Cheese Puffs,	15g and 30g Foil pack.
Drinking Water	Spa	250 ml, 500ml, 1.5liter, 2.25liter, 5 liter
Milk	Farm Fresh	200ml, 500ml
Yogurt	Farm Fresh	100g, 500g
Chanachur	Aafi	35g, 80g,300g

1.6 Product Quality

Akij food and beverage limited produce quality of product and their tagline is “bring quality in life”. Their products contain following qualities:

- Good performance
- Attractive Feature
- Reliable
- Good conformance
- Positive aesthetics
- Desire serviceability

2. Introduction to the Study

2.1 Rationale of the Study

In today's modern world research and development is more of a never-ending process where there will always be scope for further study in any educational matter. Now a day's Universities are giving the opportunity to students to conduct research in academic purpose with their own findings through experience from several organizations through internship at undergraduate level. The purpose of the study is to minimize the distribution route of beverage product of akij food and beverage ltd. To minimize the route of distribution, have to consider shortest route as well as less traffic route to deliver the product to the dealer points. In this study another purpose is to deliver the product on time smoothly without creating any stoke out scenario. Moreover, cost minimization is another important purpose of this distribution restructuring system to gather more efficiency. Even increase the responsiveness and efficiency will create idle tradeoff scenario.

2.2 Statement of the Problems

In Akij foods and beverage there is no proper route planning and proper plan to distribute their product as a result they haven't created the proper delivery plan with effectively. Every month they have huge transport fuel cost. AFBL products first load to the large capacity truck and unload in Dhaka warehouse and again the product have to load small delivery van to deliver distribution point as a result they have to pay three times loading unloading cost. Due to lack of proper demand forecasting, there is creating shortage of product in Dhaka ware house; is creating disturbance in distribution channel. More ever there is no enforcement of keeping safety stock in dealer point on the basis of company policy.

2.3 Scope and Delimitation of the Study

This study is done for academic purpose and study is limited within the Dhaka city where AFBL conduct its sell. The study is conducted in Dhaka and I worked in Dhaka Warehouse of akij food and beverage ltd. In this distribution restructuring system is not totally applicable for dairy of Akij food and beverage Ltd because dairy delivery system is different than others beverage product of AFBL. The efficiency of the employees in distribution system should consider another factor of successful distribution. So, for the further research on restructuring the distribution system the efficiency of the employee should consider as major factor.

2.4 Objective of the report

2.4.1 Broad Objective:

The main objective of the report is restructuring of distribution system of Akij food and beverage limited to reduce the cost of distribution.

2.4.2 Specific Objective:

- Find out the shortest route to deliver the beverage product.
- To identify the ways of minimizing distribution cost.
- To find the proper utilization of delivery van and minimizes the number of delivery van.

3. Review of Related Literature

Supply chain management is one of the most important major components of today's organization to enhance organizational productivity and profitability. Supply chain management starts from supplier and end with customer. Distribution is one of the most important part of supply chain and today's world is focusing on re-engineering of distribution system. (Maslaric, Groznik, & Brnjac, 2012)

The researcher introduces a methodology for the distribution network Restructuring. Main purpose of the paper is to represent a comprehensive tool to the distribution channel restructuring in order to increase the successful rate of the Restructuring project. In distribution channel re-engineering process mostly depends on efficient use of IT to decrease the uncertainty and improve the performance. In restructuring companies have to invest large amount of money to redesigning the existing traditional and fundamental product distribution channel. The methodology is already tested on a petrol company. The described methodology helps to achieve significant savings and efficiency for the case study company. In the research there is some issue for future research. In distribution channel restructuring should to focus on IT. Moreover, a frame work for security and risk management should be concerned.

4. Limitation

- Limitation of data is the main challenge of the study because most of the information is collected from the responsible person of the department who are not always available.
- Report is highly depended on secondary source of data collected from the company. As they were not interested to disclose too many data because of their business strategies. Approximate data are used mostly here which may differ slightly from the reality.
- Time was constrained which is another limitation of the study.
- Most of the time demand of the beverage products depends on the season so it is very difficult to forecast the demand of the beverage product.
- Dealer points beside narrow roadside may arise problem to implement the proposed distribution system.
- Large amount of products delivery to dealer points may create problem for lack of proper space of dealer point to store the product.

5. Methodology of Study

The primary method of this study starts from discussion with distribution manager to observe the core challenges and their influential factors. It resembles the idea how the distribution system can be re-structure.

5.1 Sources of Data:

Majority of the study is based on primary data. However some secondary data source is used for study. Saving algorithm is used in this paper for mathematical purpose.

5.1.1. Primary Data

Primary data source is face to face interview with the AFBL officials who are responsible for the respective department. Moreover, field review of the distribution system provides information about actual scenario.

5.1.2. Secondary Data

Secondary data is collected from AFBL official records.

5.2 Analysis tools

In this analysis have used excel to analysis the saving algorithm. Firstly, analysis the average fifty days consummation of every dealer under Dhaka warehouse to know their consummation pattern. Secondly, by using the saving algorithm try find out the daily average consummation, average consummation on every order. Moreover by analysis the saving algorithm tries to find out on an average point of quantity as safety stock and its delivery time. Even, to propose a well-established shortest route to deliver the beverage product have to used Google map to calculate the distance of every dealer point from Dhaka warehouse of Akij food and beverage Ltd. To do the proper route planning transportation model and shortest route is used in this study.

6. Descriptive analysis and Interpretation

6.1 Proposed Restructuring of Distribution

The proposed restructuring of distribution system of Akij food and beverage Ltd has introduced a proper way to deliver the product. Firstly, On the basis of the forecasted demand of the product and the location of dealer points Dhaka is divided into fourteen routes. Secondly, to fulfill the forecasted demand of dealer points the delivery plan is designed. Huge demand's dealer point's delivery will be from the factory by large capacity delivery van. In this area there will be seventeen times delivery in fifty days. Delivery from direct factory will reduce loading unloading cost. The dealer points which are situated beside narrow roadside its delivery will be from Dhaka warehouse by small delivery van on daily basis. Thirdly, the fuel cost and loading unloading cost is measured. Fuel cost varies delivery van to delivery van for this reason specific per mile fuel cost is used for specific delivery van. In this designed restructuring of distribution system the loading/unloading and fuel cost is decreasing. Moreover, Dhaka warehouse has the opportunity to deliver the products by using only seven delivery van with two trips per day.

Route SI no	Distributor point	3 days order	Total Quantity	Capacity of delivery van & number	Delivery from	Distance	Cost of Fuel (BDT)	Cost of loading/unloading (BDT)	50 days fuel cost (BDT)	50 days loading cost (BDT)	Times of delivery
1	Adabor	465	4875	5 ton capacity delivery van = 2 4 ton capacity delivery van = 1	Factory	12.7	1120.594	1920	19046.698	32,640	17 times
	Adabor	715									
	Mohammadpur	521									
	Dhanmondi	567									
	Dhanmondi B	510									
	Lalbag	531									
	Lalbag A	475									
	Nazimuddin Road	570									
	Nazimuddin Road B	521									
	Mirpur/O	350									
2	Kaful	282	897	3 ton capacity delivery van = 1	Factory	3.8	83.6	320	1,421	5,440	
	Mirpur/O	265									
	Adabor to Mirpur/O	172									
3	Adabor to Mirpur/O	172	2053	5 ton capacity delivery van = 1 1 ton capacity delivery van = 1	Dhaka warehouse	8.2	462.7	800	7,866	13,600	17 times
	Motijel B	603									
	Motijil	401									
	Khilgoan	472									
	Khilgon B	577									
4	Zigatola B	214	290	1.5 ton delivery van = 1	Dhaka warehouse	2.7	54	360	2,700	18,000	
	Zigatola	76									
5	Zigatola	76	295	From factory truck	Factory			118		2,006.00	
	6 Bashundhara City	219									
7	Sutrapur B	288	470	1.4 ton capacity delivery van = 1	Dhaka warehouse	6.7	273.762	564	13,688	28,200	
	Sutrapur	182									
8	Motijil to sutrapur	123	316	1 ton capacity delivery van = 1	Dhaka warehouse	9.6	124.8	216		2,592	50 times
	Denra	211									
9	Denra	105	304	1.5 ton capacity delivery van = 1	Dhaka warehouse	6.7	134	360	6,700	18,000	
	Denra B	105									
10	Sayedabad B	221	304	1.5 ton capacity delivery van = 1	Dhaka warehouse	6.5	130	360	6,500	18,000	
	Sayedabad	83									
11	Madartek	173	291	1.5 ton capacity delivery van = 1	Dhaka warehouse	7.2	144	349.2	7,200	17,460	
	Madartek A	131									
12	Kanrangirchor	155	308	1 ton capacity delivery van = 1	Dhaka warehouse	12.3	246	369.6	12,300	18,480	
	Kanrangirchor B	136									
13	Konapara B	164	135	5 ton capacity delivery van = 1	Dhaka warehouse	21.5	279.5	216	3,633.50	2,808.00	13 times
	Konapara	144									
14	Kaundiya	135	135	5 ton capacity delivery van = 1	Dhaka warehouse	21.5	279.5	216	3,633.50	2,808.00	13 times
				Total Cost							
				Subtotal Cost Loading and Fuel							
									92,943	198,466	
										291,409	

Figure: 1

6.2 Proposed specific route planning:

In the proposed alternative specific distribution channel deliver plan is set on the basis of demand of product. So, the proposed distribution of this area should be consecutively after three days, four day and daily. As a result, delivery of this area should be by five, four and three ton capacity delivery van from factory. In the less demand dealer points and narrow road near Dhaka warehouse will deliver from Dhaka warehouse by number of seven delivery van load capacity are 1.5, 1.4, 1 and .5 ton.

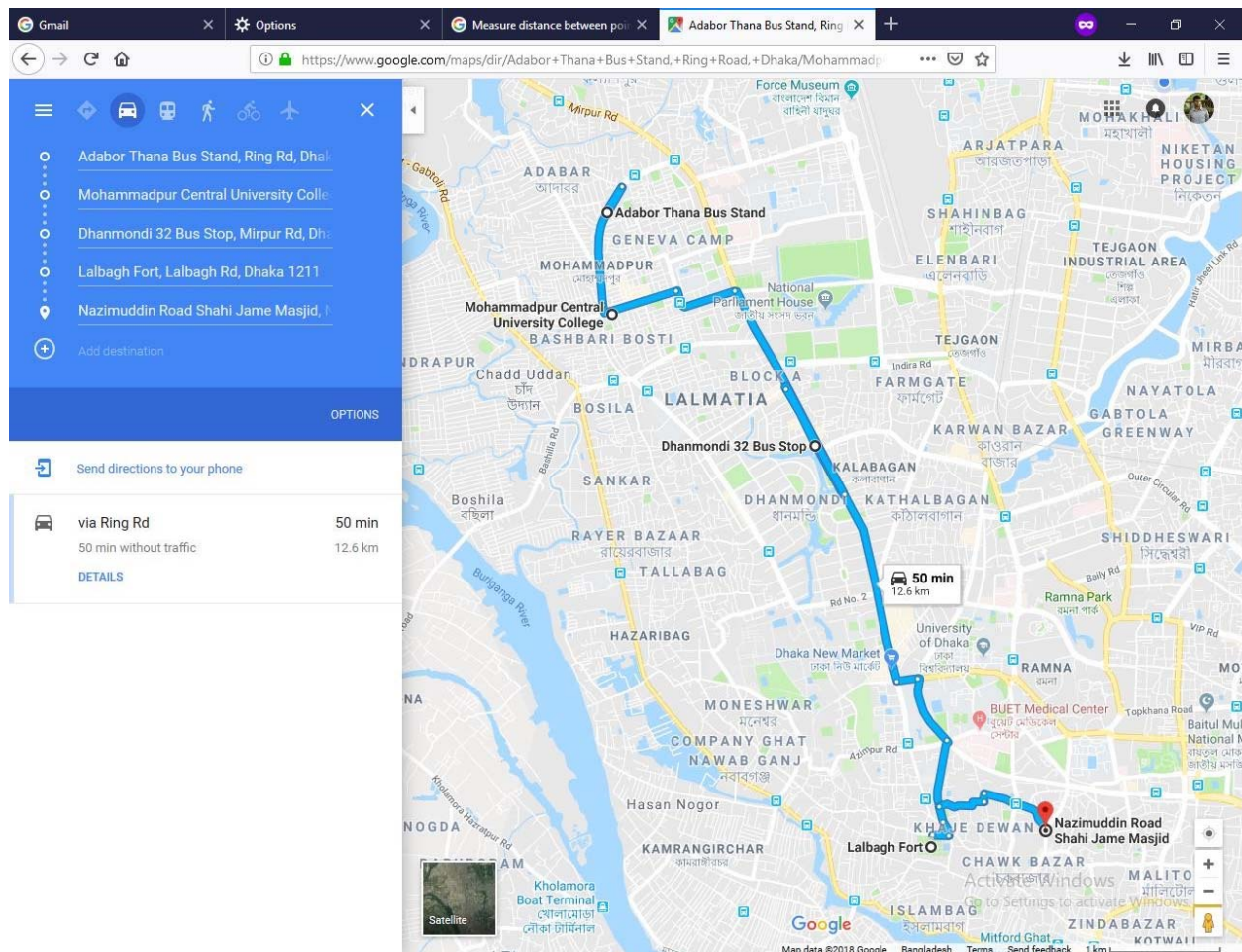


Figure 2: Route 1

The delivery of this route will be from factory by five ton capacity delivery van number three and one three ton capacity delivery van. Delivery will be after three days of first delivery and 17 times delivery in fifty days.

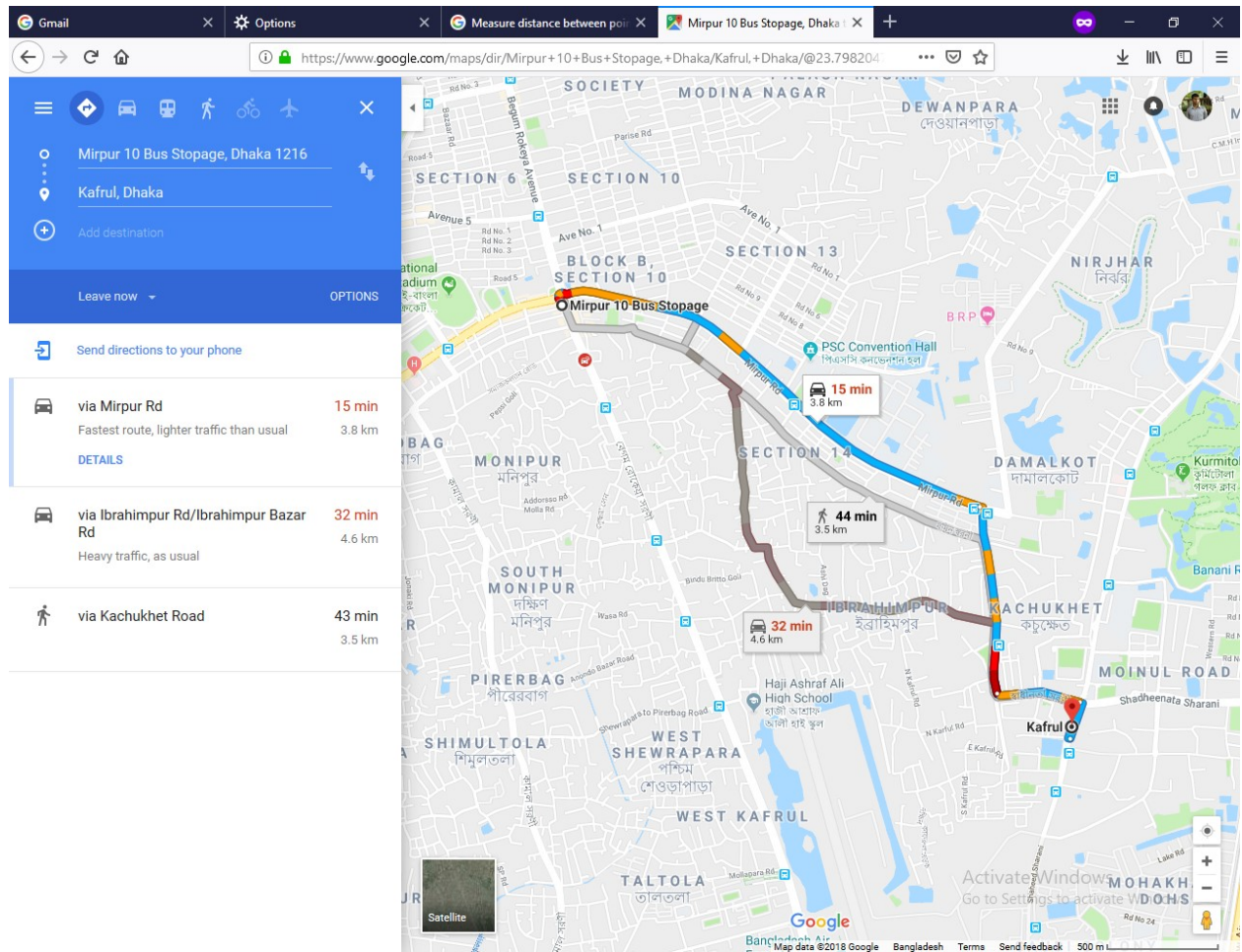


Figure 3: Route 2

Delivery of this area will be direct from factory by one delivery van with three ton load capacity. The delivery will be after three days and seventeen times in fifty days.

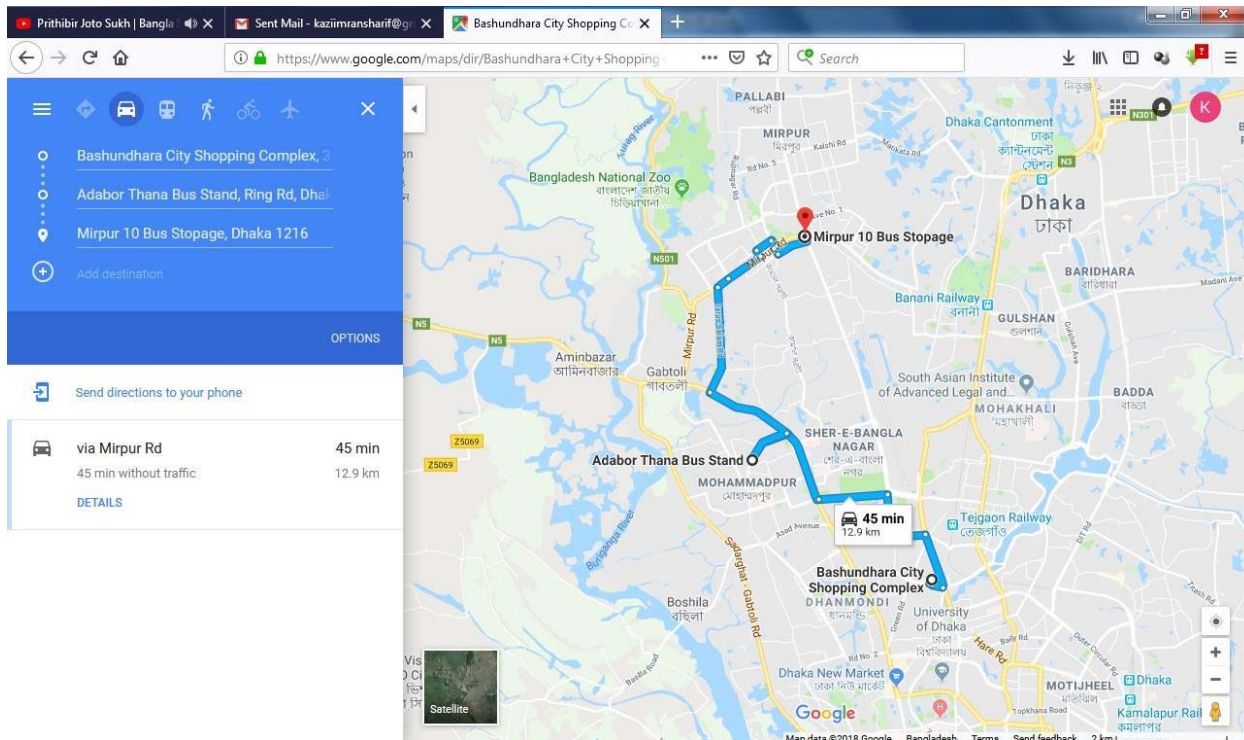


Figure 4: Route 3

After deliver from factory shortest 175 case products of Adabor and mirpur10 will deliver from Dhaka warehouse by half ton capacity delivery van.

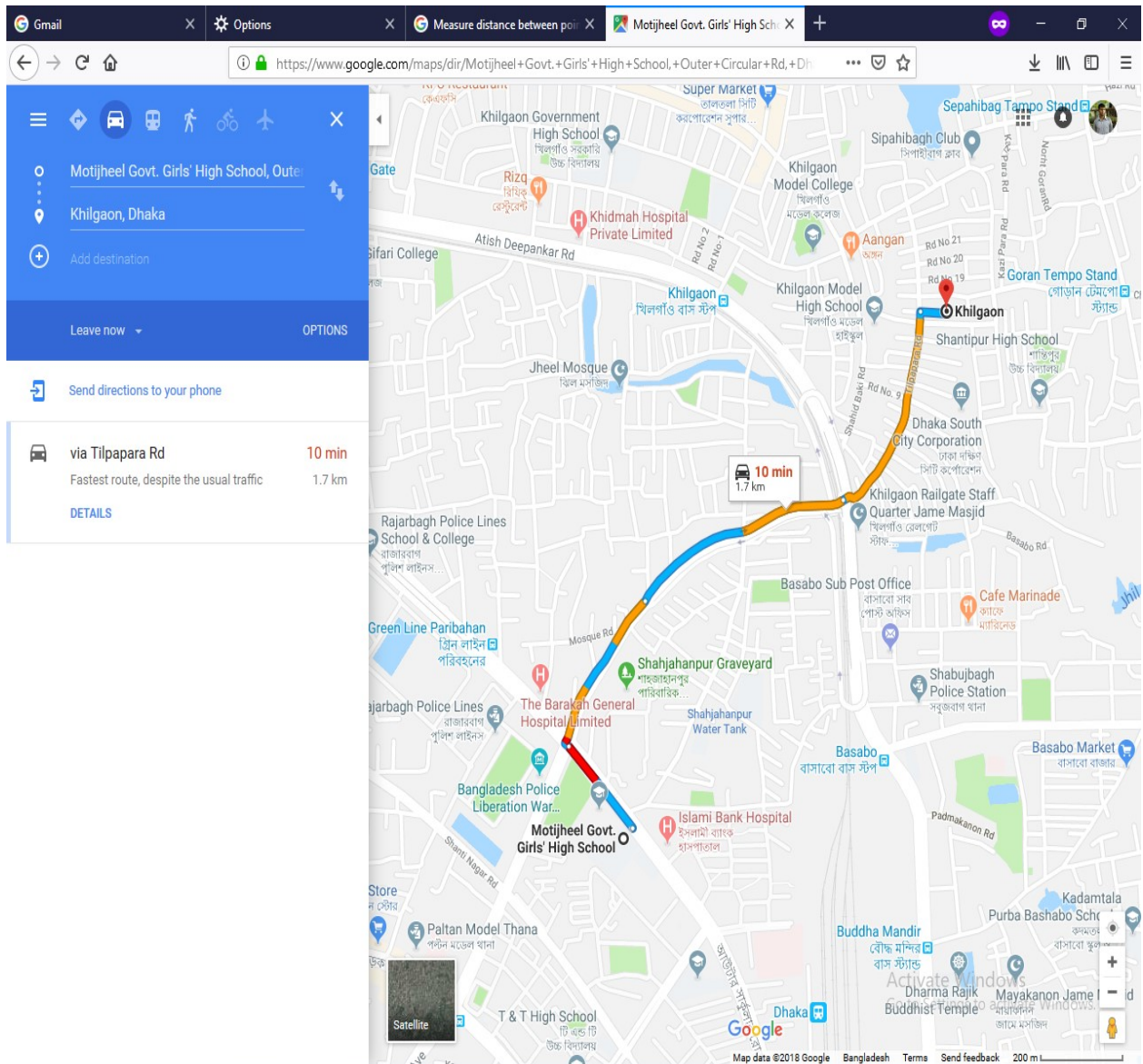


Figure 5: Route 4

In this route delivery will be provide from factory by a five ton capacity truck and shortest amount will be deliver from Dhaka warehouse by a ton capacity delivery van.

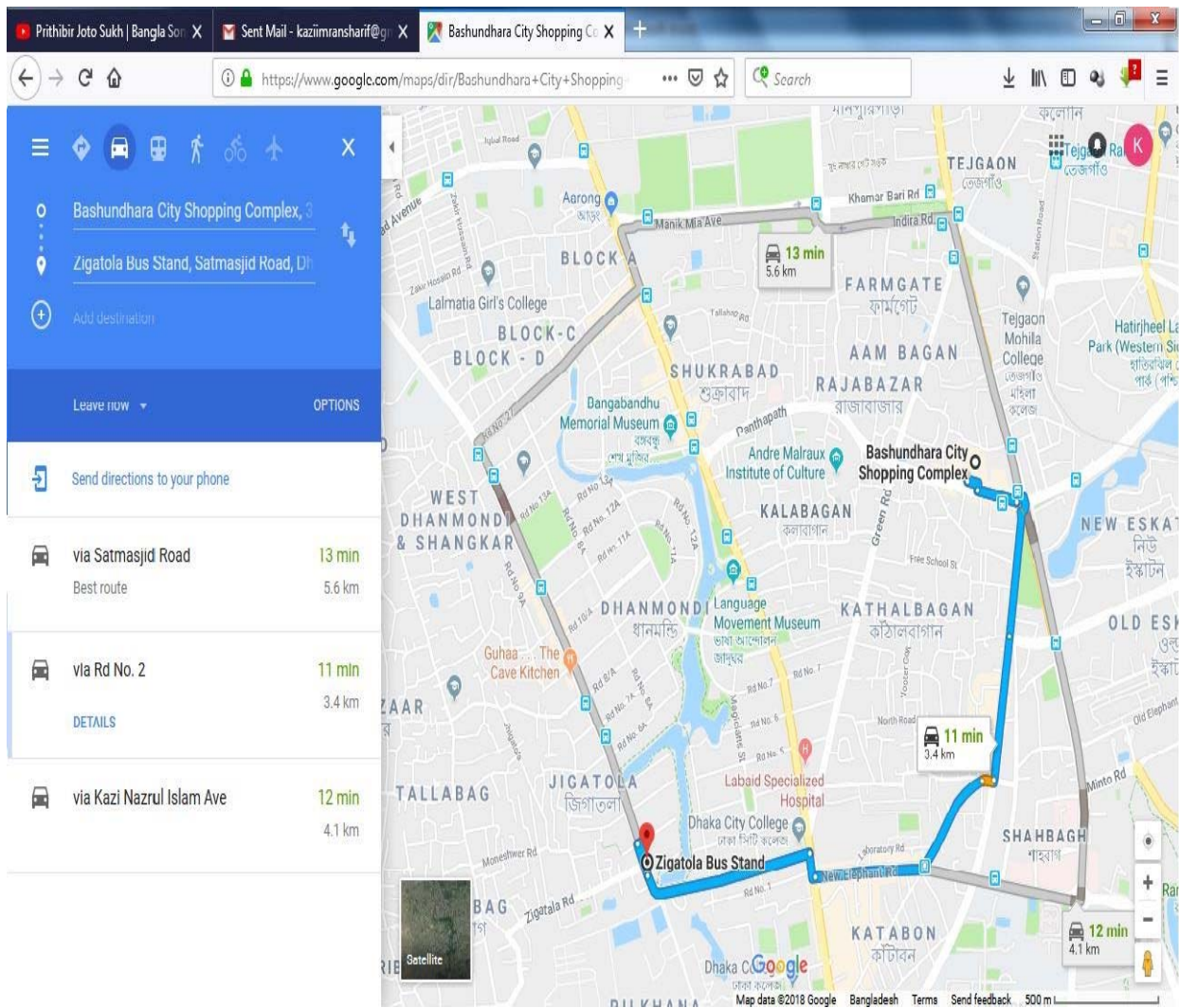


Figure 6: Route 5

As the road of this area is narrow delivery will be from Dhaka warehouse by a one and half ton capacity delivery van. Delivery will be every day because of high demand and limitation of delivery by high capacity delivery van.

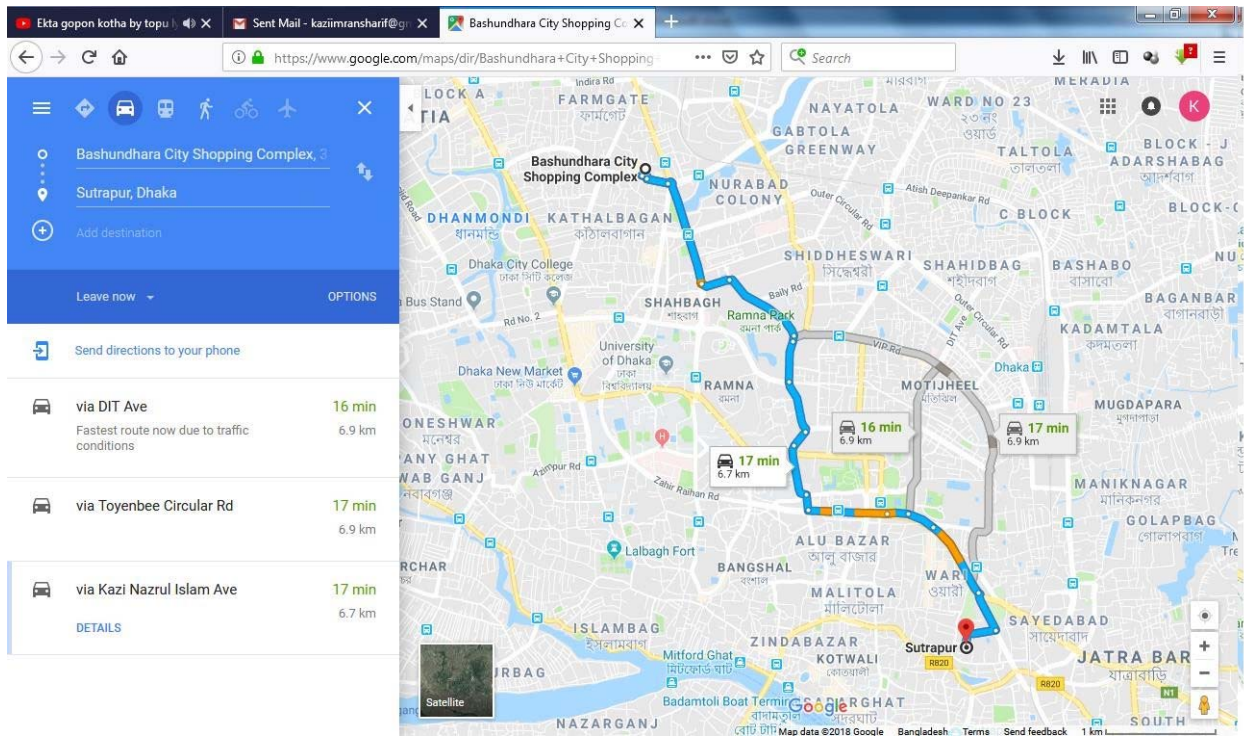


Figure 7: Route 7

Because of high demand and narrow road the delivery will be from Dhaka warehouse by a 1.4 ton capacity delivery.

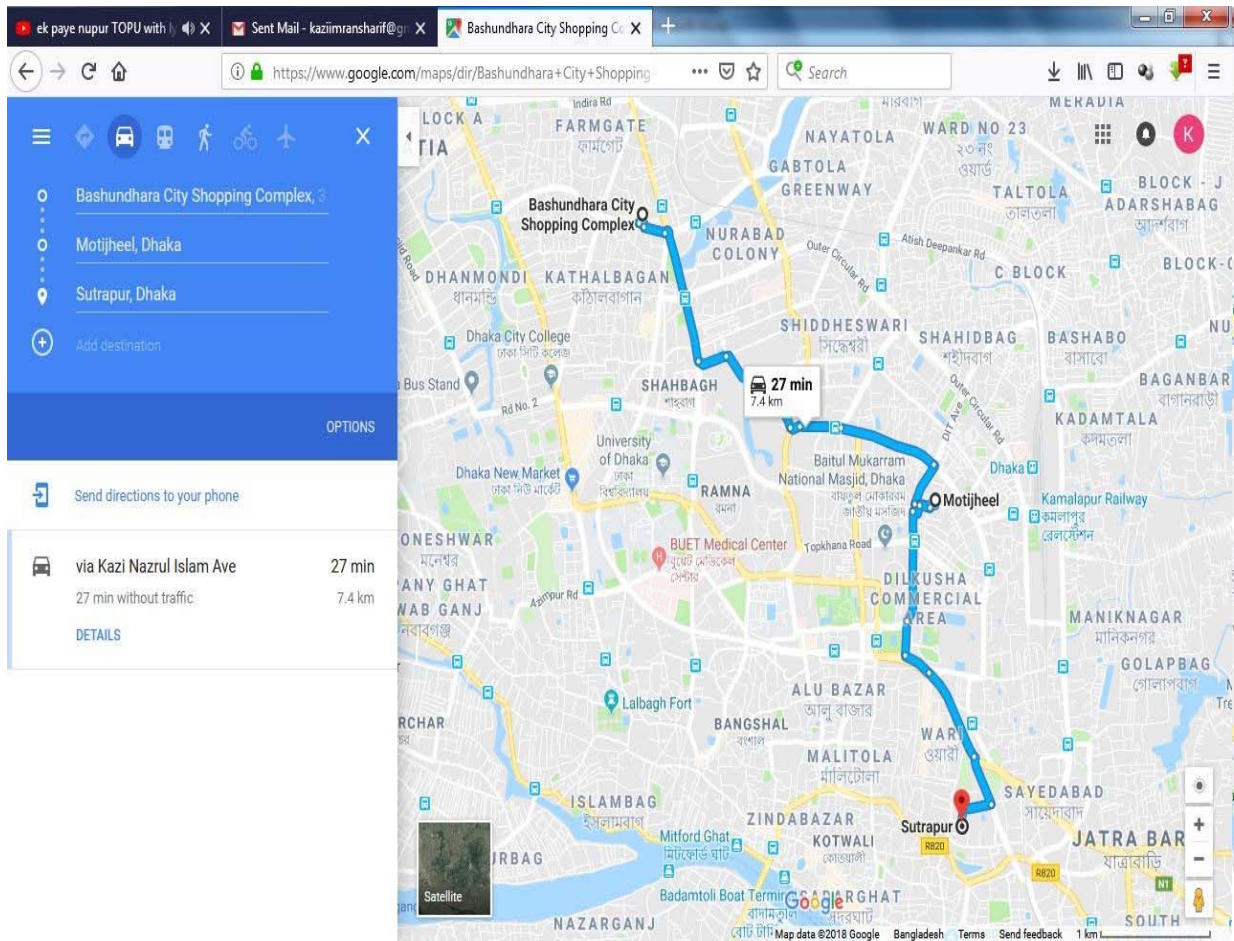


Figure 8: Route 8

To fulfill the shortest of Motijheel and Sutrapur, there will be delivery by a half ton capacity delivery van from Dhaka warehouse.

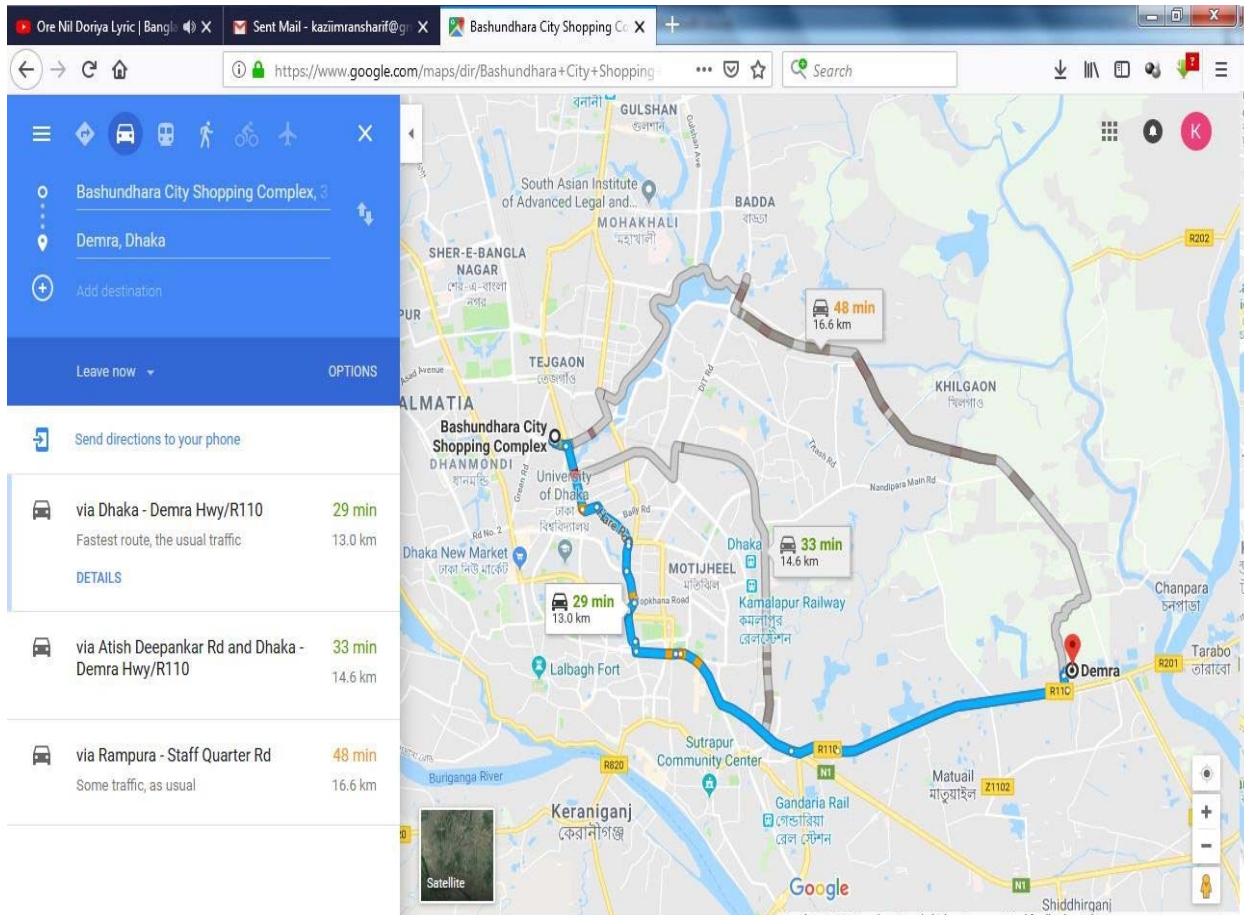


Figure 9: Route 9

Delivery of Demra dealer point will deliver from Dhaka warehouse by a one ton capacity delivery van.

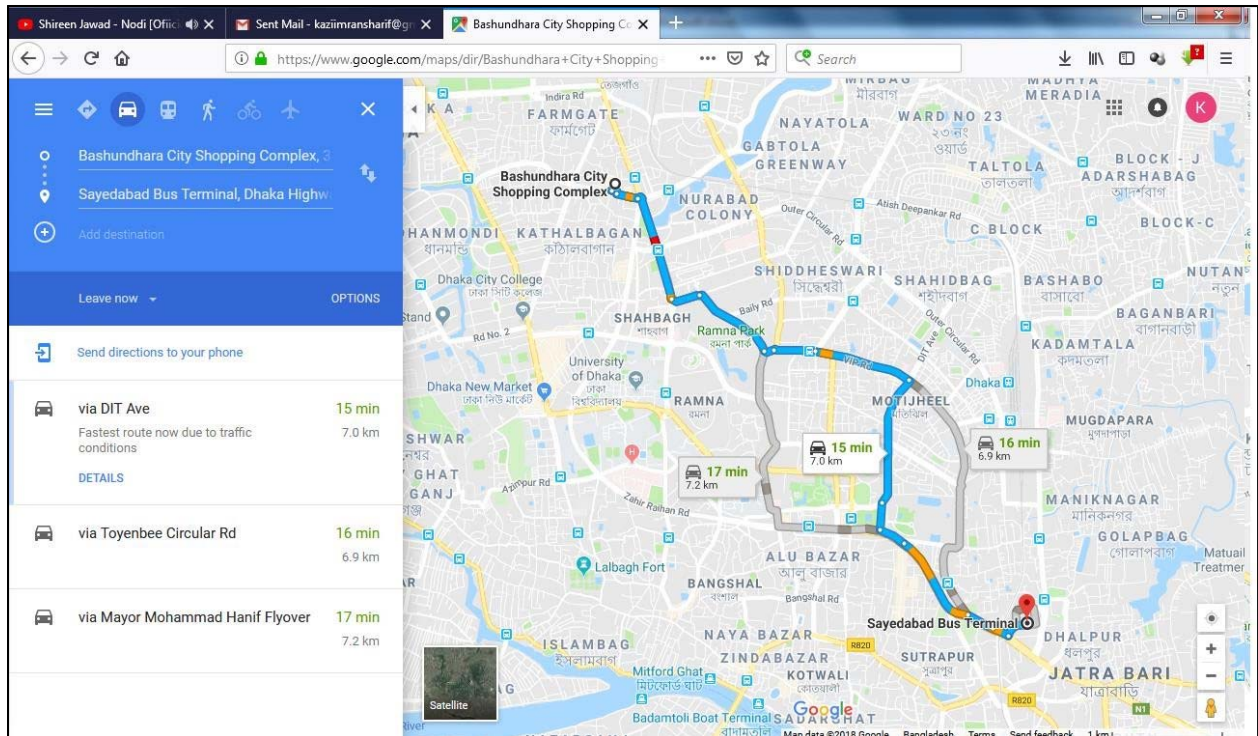


Figure 10: Route 10

Delivery of Sayedabad will be from Dhaka warehouse by a 1.5 ton capacity delivery van every day.

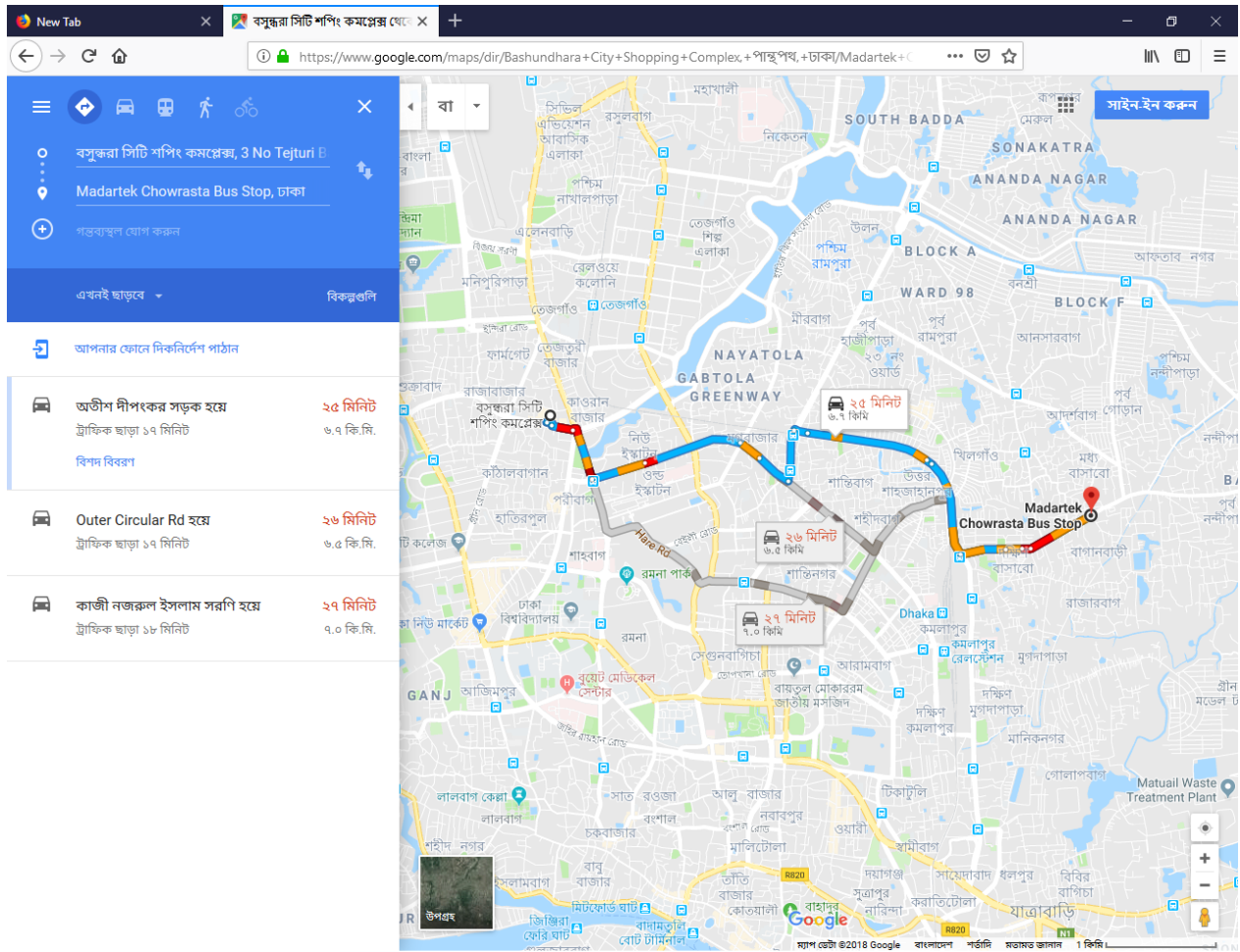


Figure 11: Route 11

Delivery of this route will be from the Dhaka warehouse.

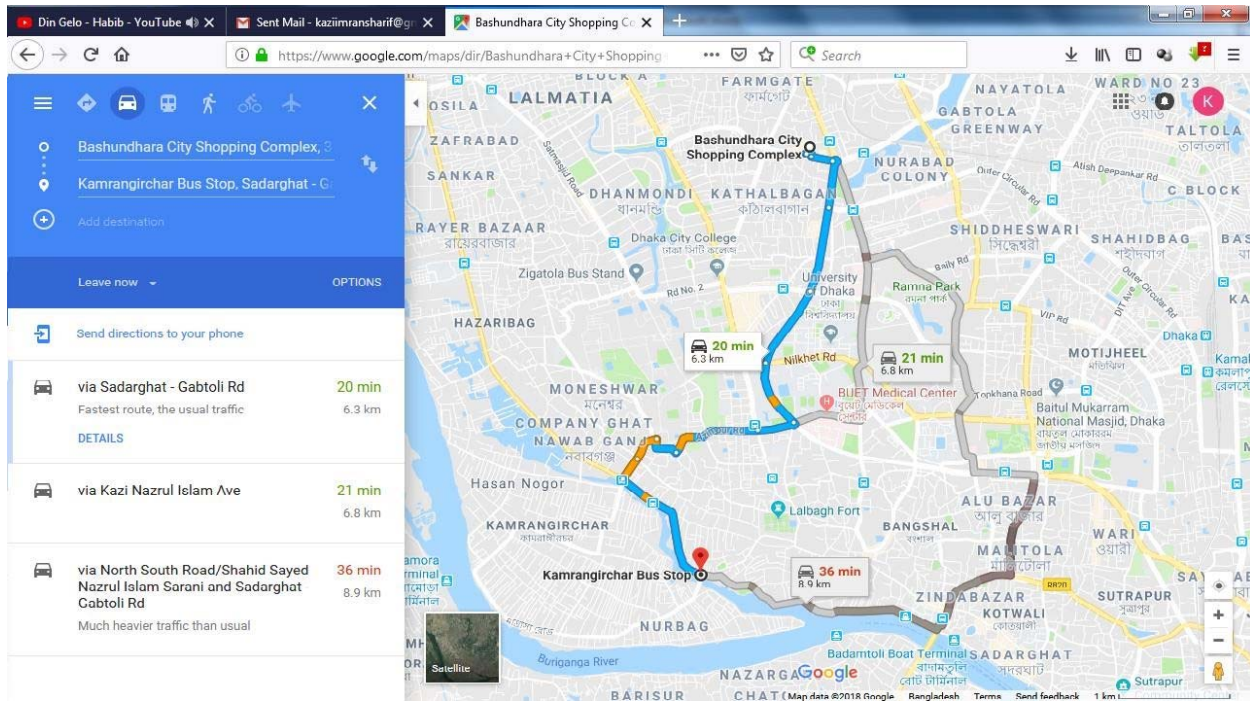


Figure 12: Route 12

Delivery of Kamrangirchar will be from Dhaka warehouse by a 1.5 ton capacity delivery van every day.

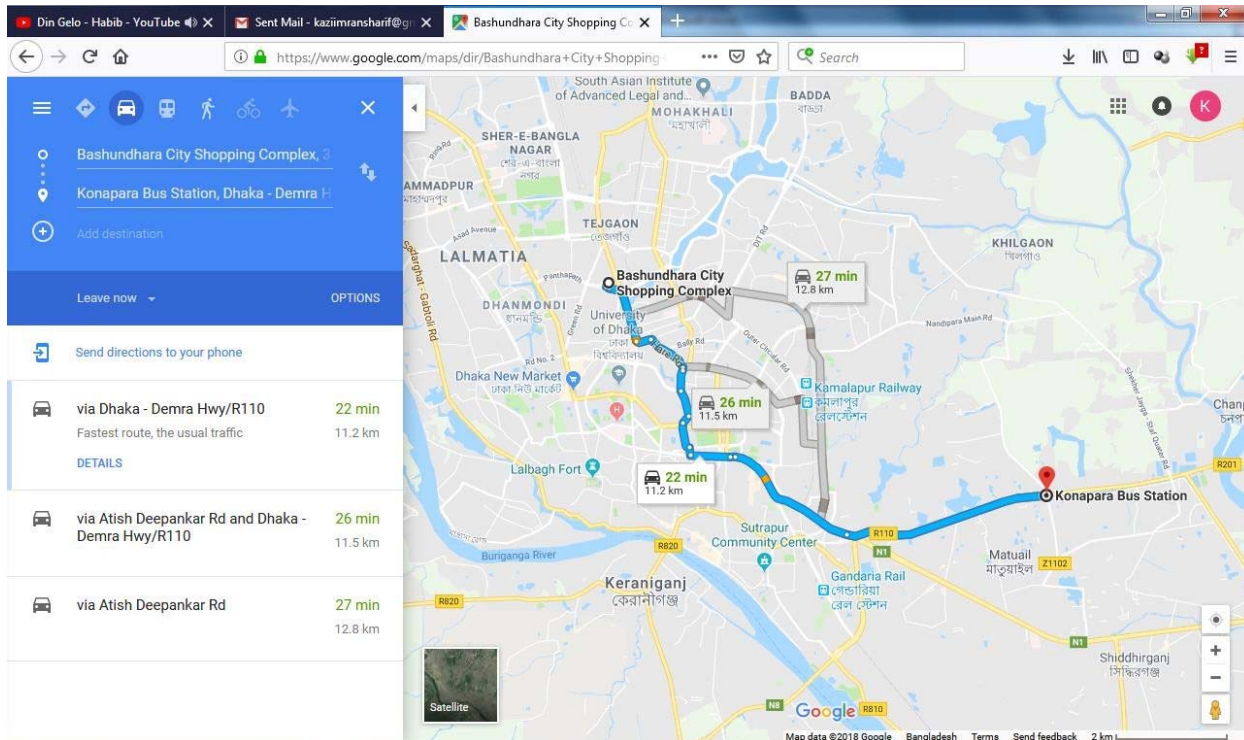


Figure 13: Route 13

Delivery of Konapara will be from Dhaka warehouse by a 1.5 ton capacity delivery van on daily basis.

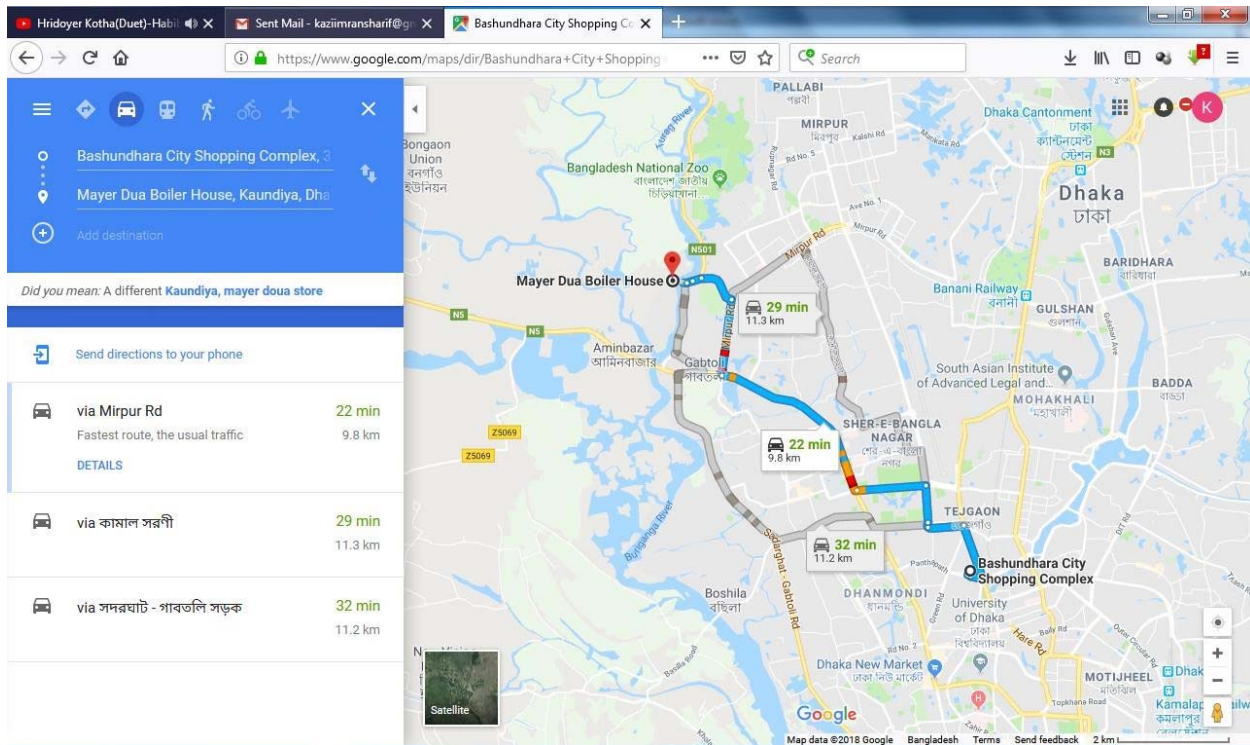


Figure 14: Route 14

Delivery of Kaundia will be from Dhaka warehouse by a .5 ton capacity deliver van after consecutively three days.

6.3 Distribution Cost:

In the table the existing cost are calculated from the previous data of the company. Average monthly cost are converted to fifty days cost to represent in the table. Proposed costs are calculated from the redesign of distribution system and the detail calculation is in appendix.

Distribution cost of 50 days	Existing	Proposed
Driver Salary	397,115	154,434
Helper + delivery man's Salary	121,257	94,311
DA Driver	62,400	28,000
DA Helper	10,400	8,000
DA Delivery Man	6,500	7,500
Loading+ unload cost	314,099	198,466
Maintenance cost	229,065	165,425
Fuel Cost	638,113	91,373
Total cost	1,778,949	747,508

Figure 15: Total Distribution Cost

In the bellow table the existing and proposed distribution cost is divided by total amount of delivered case to calculate the per case distribution cost in Dhaka city.

Distribution cost of 50 days	Existing	Proposed
Driver Salary	1.52	0.59
Helper + delivery man's Salary	0.46	0.36
DA Driver	0.24	0.11
DA Helper	0.04	0.03
DA Delivery Man	0.02	0.03
Loading+ unload cost	1.20	0.76
Maintenance cost	0.88	0.63
Fuel Cost	2.44	0.36
Total cost	6.80	2.87

Figure 16: Per Case Distribution Cost

7. Relative Analysis and Findings of the Study

In the distribution system restructuring of AFBL there are huge scope to reduce the distribution cost, reduce response time and scope to use the delivery van effectively and efficiently.

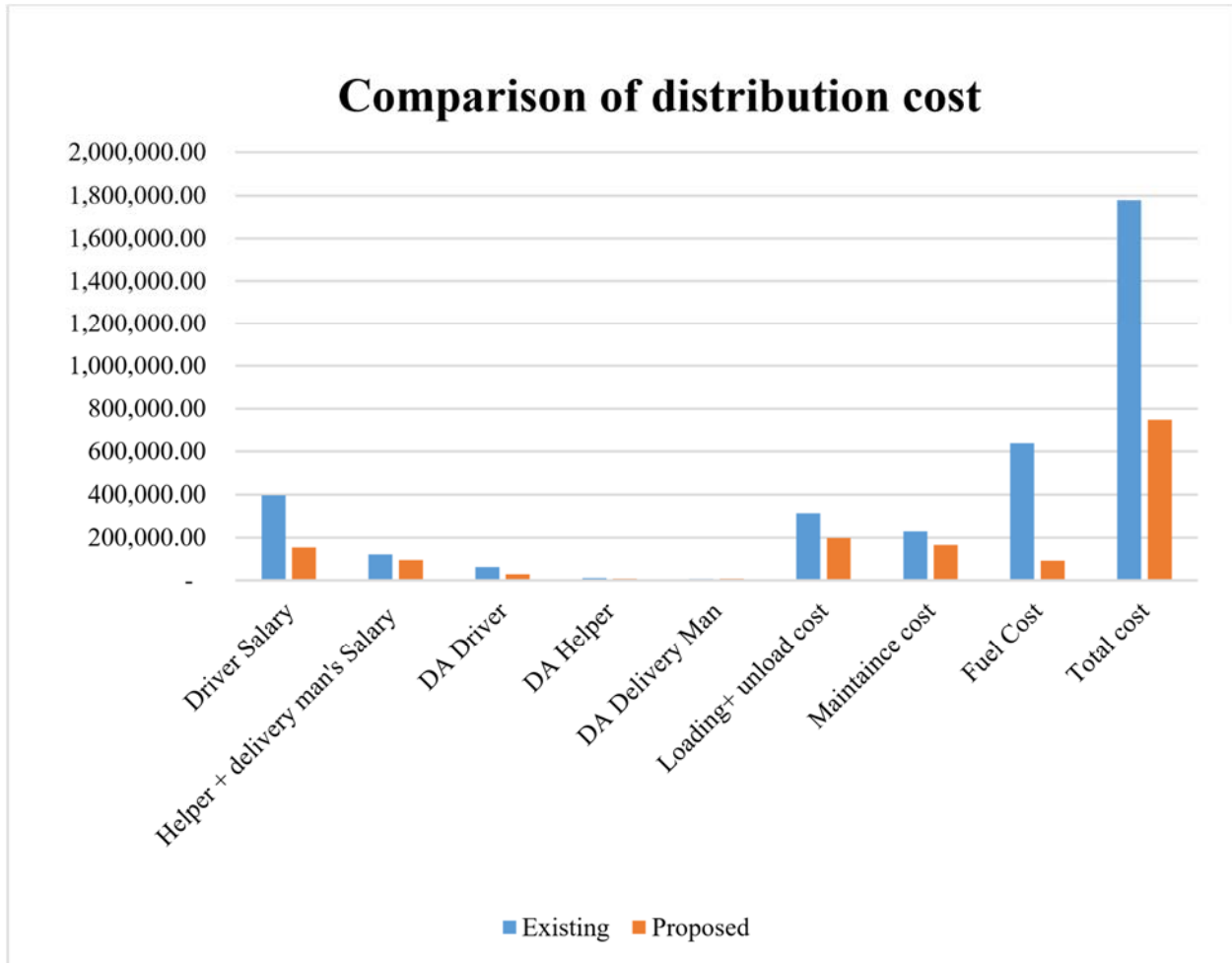


Figure 17: Total Distribution Cost Comparison

In the proposed methodology there are scope to reduce loading / unloading cost, fuel cost and another cost related with delivery. Firstly, delivery product from the factory will save loading and unloading cost .80 taka per case. The distribution point where the scope with delivery with five ton delivery van will reduce cost of unloading and loading from Dhaka warehouse. Even with direct delivery from factory will reduce pressure on Dhaka warehouse's delivery van. Secondly, delivery with 5ton delivery van can meet the demand of many distributor point which will take the fuel cost in an economics of scale and it will reduce fifty percent than the existence cost.

Moreover, as in the proposed study the delivery will be consecutively three days, four days and fifty percent's on daily basis the DA of driver and delivery man will be reduce and also number of delivery van will be reduce. In the proposed Restructuring distribution system Dhaka warehouse will be able to deliver by using seven delivery vans.

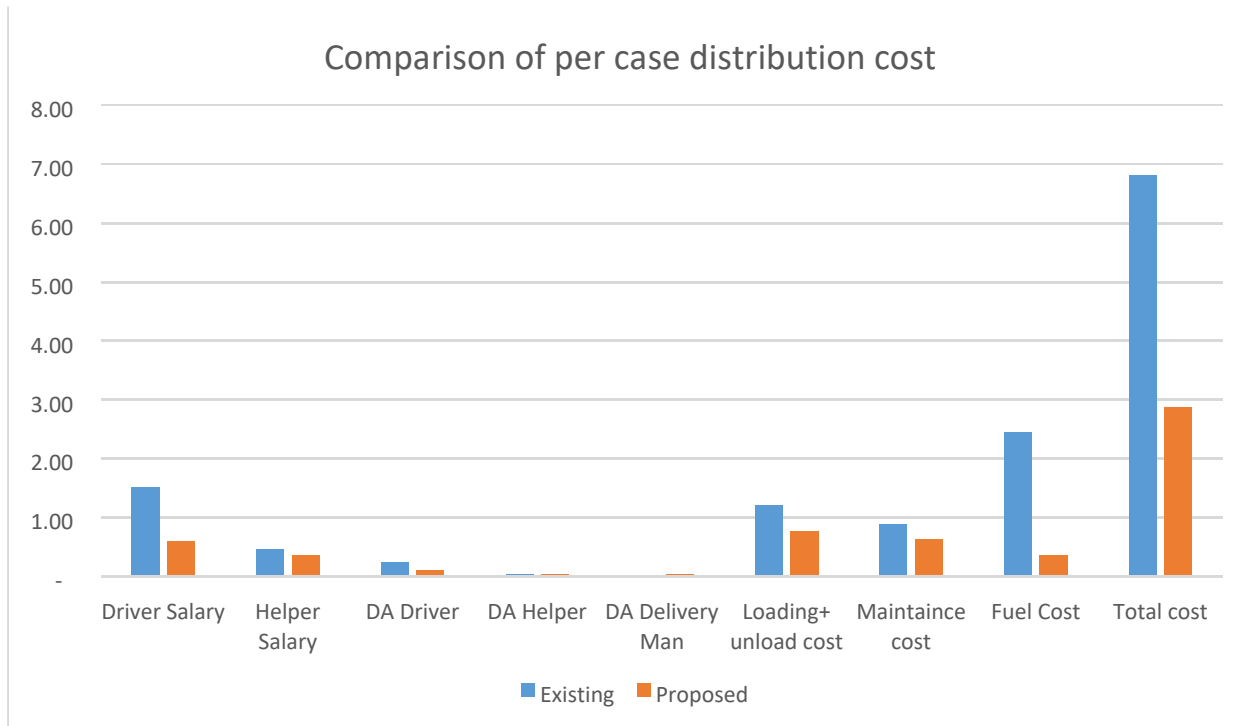


Figure 18: Per Case Distribution Cost Comparison

Forecasted demand of the dealer points and use of IT will help the company to know current stock of products and ensure quick delivery. As the demand of the dealer point is already known and can assume the consecutively three days demand it will be easy to deliver on right time. In case of any critical moment and weather influential demand arise, that moment will be managed with the safety stock of Dhaka warehouse. Moreover, in the proposed restructuring model after getting delivery on hand dealer will press another order and before getting the second order delivery they will prepare money for order press in any time. Even, every day the distribution department of AFBL will monitor the current stock and order of the dealers with the use of IT and if any possibility to stock out of the product they will take necessary steps with help of dealer.

8. Recommendation

General prospects from studies, which may provide some recommendation and which my help to improve, are following,

- Akij food and beverage limited should come up with an agreement with the dealer to maintain some policies to order the product. Firstly, the dealer should maintain two times liquidity money before press an order. As a result, after one delivery the company will be ready to delivery second time delivery in short time as far dealer requirement. Secondly, Deller should minimize the time of unloading the delivery van and to minimize the time of unloading they should prepare themselves after getting information about delivery.
- The dealer points have the capacity of store products three times of their daily demand. In this case company may add this point with their dealership contract. Even, company should provide some financial support to existence dealer to moderate the store capacity. Though it may seem large investment but after one or two year it will reach in economics of scale.
- As five-ton delivery van has no permission on running in Dhaka city after 10:00 pm to 6:00 am they should deliver the product at night in dealer point. In case of any stock out scenario the Dhaka warehouse will provide the delivery from their safety stoke.
- Akij food and beverage limited should develop software system from where company will be able to know about the current safety stock of dealer points and their current order. On the basis of the information company will be easily updated themselves when and how amount of product they have to deliver. On the updated information company will deliver in a short time after formal order press of dealer.
- Company should minimize the waiting time of the loading the delivery van from the factory. Increase of loading point of the factory may be one solution of decrease waiting time. Another solution may be use of automation technology to load the delivery van.
- Employee should train up with new distribution technologies to assure efficiency in distribution process.
- Akij food and beverage should more focus on modern distribution channel than traditional channel.
- Company should more focus on online order processing with the use and implementation of apps or others easy technology.

9. Conclusion

The paper represents a cost optimizing methodology for the distribution system of beverage products of Akij food and beverage limited. The goal was to minimize the huge costs of deliver the products to the dealer points by redesigning and optimizing various parameters of cost. The developed methodology showed excellent cost effectiveness for the distribution system which is applicable for both the academia and practitioners applying it for cost minimizing by redesign the distribution channel with success. Akij food and beverage limited has the opportunity to minimize of its distribution cost fifty percent by using this redesign of distribution system. By applying the proposed methodology the company can be optimized successfully the convenient route, minimized distribution cost; reduce the number of delivery van of Dhaka warehouse. The proposed mythology minimized the route as a result huge amount of fuel cost is decreasing. Even direct delivery from factory is reducing delivery related cost. Moreover, proposed restructuring of distribution system required only seven small delivery vans from Dhaka warehouse.

This research has also exposed a serious of issue for future work. Firstly, the proposed methodology is calculation based; need to be practical implication on Akij food and beverage limited. Secondly, need to future developments on connecting with IT regarding order processing and current stock updates of dealers. Currently, the proposed methodology is focusing on optimization of route, reduce distribution cost, forecasting demand, reduce lead time and it should be extended to risk management of stock out and delivery on time.

10. Bibliography

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11. Appendix A: Dealer's Demand Analysis

SL	Distributor point	Total 50 days order (Case)	Average order (Case)	Average daily order (Case)	Total order	Distance (KM)	Total loading, unloading cost (Tk)	Total Fuel cost (Tk)	Average days demand (Case)	3
1	Nazimuddin Road	9,512	238	190	40	3.80	11,414	3,092	570.72	
2	Mohammadpur	8,698	249	174	35	4.90	10,438	3,488	521.88	
3	Adabor	11,929	497	239	24	6.50	14,315	3,173	715.74	
4	Sayedabad	4,156	181	83	23	7.30	4,987	3,415	249.36	
5	Zigatola	1,924	192	38	10	3.40	2,309	692	115.44	
6	Sutrapur	9,131	234	183	39	6.90	10,957	5,473	547.86	
7	Adabor	7,751	258	155	30	6.50	9,301	3,966	465.06	
8	Motijil	6,696	258	134	26	4.20	8,035	2,221	401.76	
9	Khilgoan	7,874	272	157	29	10.90	9,449	6,429	472.44	
10	Mirpur10	5,829	648	117	9	7.60	6,995	1,391	349.74	
11	Khilgon B	9,622	418	192	23	10.90	11,546	5,099	577.32	
12	Mirpur 10	4,432	341	89	13	7.60	5,318	2,010	265.92	
13	Madertek	8,658	577	173	15	5.50	10,390	1,678	519.48	
14	Kamrangirchor	7,750	388	155	20	7.20	9,300	2,929	465.00	
15	Dhanmondi	9,464	411	189	23	3.80	11,357	1,778	567.84	
16	Demra	5,271	329	105	16	13.00	6,325	4,231	316.26	
17	Lalbag	8,859	341	177	26	4.50	10,631	2,380	531.54	
18	Kauntiya	2,241	280	45	8	-	2,689	-	134.46	
19	Nazimuddin Road A	13,543	356	271	38	3.40	16,252	2,628	812.58	

20	Kanrangirchor B	6,800	358	136	19	7.20	8,160	2,783	408.00
21	Motijeel B	10,060	279	201	36	8.20	12,072	6,004	603.60
22	Dhonmondi B	8,508	340	170	25	3.80	10,210	1,932	510.48
23	Basundhora City	4,931	205	99	24		5,917	-	295.86
24	Konapara	7,212	288	144	25	12.30	8,654	6,255	432.72
25	Sayedabad B	11,093	370	222	30	7.30	13,312	4,454	665.58
26	Zigatola B	5,354	233	107	23	3.40	6,425	1,591	321.24
27	Kafrul A	4,703	336	94	14	6.50	5,644	1,851	282.18
28	Sutrapur B	14,443	380	289	38	6.90	17,332	5,333	866.58
29	Lalmatia A	12,058	416	241	29	3.60	14,470	2,123	723.48
30	Konapara B	8,209	293	164	28	12.30	9,851	7,005	492.54
31	Lalbag A	7,929	240	159	33	4.50	9,515	3,020	475.74
32	Madartek A	6,550	273	131	24	5.50	7,860	2,685	393.00
33	Demra	10,559	302	211	35	13.00	12,671	9,255	633.54
	SUM	261,749	10,782	5,235	830	212.40	314,099	110,365	15,704.94

Appendix B: Notes and Calculation

Delivery van	Load capacity(Case)	Fuel cost per kilo
5 ton	1800	16.26 tk
4 ton	1200	11.61 tk
3 ton	800	10 tk
1.5 ton	300	10 tk
1.4 ton	250	11.43 tk
1 ton	200	9 tk
.5 ton	180	6.5 tk