
The Effective Solutions for Online Medicine Delivery Challenges: A Brief Study on Its Supply Chain

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1. Abstract

This paper explores the ongoing challenges in online medicine delivery and its supply chain management from manufacturers to consumers. In Bangladesh, buying medicines online has not become popular yet. Due to trust issues, the customers prefer buying medicines offline to online. Medicine is a sensitive product to deliver. It can not be delivered like normal products. A strict set of rules and protocols has to be maintained in the logistic process starting from the manufacturer to the consumer. In this paper, we will broadly discuss the challenges of delivering temperature-dependent medicines, delivering medicines through a random person, low stock of medicines in online platforms, not updated websites, and why customers are yet to adopt this new industry; also our proposal to solve the problem from the ground level.

Written by the author Kazi Aklima Sultana Urmi

2. Keywords: online medicine challenges, supply chain management, pharmaceutical industry, delivery, medicine bank, via application, value chain

3. Introduction

Technology has made our lives easier and brought everything in our hands. Be it reading the news or ordering food, we just need a mobile phone and internet access to get everything at home. The lockdown due to the Covid-19 outbreak made it difficult to go out and get our daily necessities. So, it is no surprise that the home delivery services have seen a significant uptick in their business. From groceries, to cooking supplies and even medicines, we could get everything online. Although food delivery services are quite popular, unfortunately, the case is not that strong for the internet based drugstores and pharmacies.

On paper online drug delivery services seem like a very desirable privilege. But due to poor execution of these services, the end customer has to go through a hoard of problems which include but aren't limited to, poor inventory, lack of quality control, low stock, limited availability and long delivery time. All of these make online drugstores an unfavorable alternative to the local ones where one can find almost all the medicines one needs at a good price and sometimes get discounts even.

The problems that the online drugstores are facing are in one way or another linked to their supply chain management or lack thereof. Of course the challenges of running a successful business in

real life are endless, but a close inspection of the supply chain from the very root can provide valuable insights which can be essential in mitigating the problems.

Written by the author Kazi Aklima Sultana Urmi

4. Objectives

This paper aims to,

1. Find out the challenges in online medicine delivery and lacks in its supply chain management
2. To improve efficiency and effectiveness of procurement and distribution systems of the online drug outlets through robust quality controls
3. Provide sustainable real world trouble-free business solutions to fill the gap.
4. The tracking system of goods activities like preparation of Supply Order, Shipment, etc
5. Popularizing online drug stores as viable alternatives to conventional pharmacies.

Written by the author Kazi Aklima Sultana Urmi

5. Literature Review

5.1. Background: The importance of health and medicine has enhanced the life expectancy of human beings. For the last hundred years' medicinal processes and medical equipment have proved to be the boon to human health for diagnosing properly and for applying proper medicines to the patient. And, medicines are not a luxury today, rather they are as important and necessary as food or clothes to us for our survival. We have always obtained our needed medicines from the stores physically going to them whether they are nearby or not.

The emergence of online shopping as we know today developed with the emergence of the Internet. Initially, this platform only functioned as an advertising tool for companies, providing information about its products. It quickly moved on from this simple utility to actual online shopping transactions due to the development of interactive Web pages and secure transmissions.

5.2. Attitudes towards buying medicines online: The scope and popularity of online shopping are increasing day by day and one can find and purchase almost anything from online sellers. But unlike buying foods, clothes, or other accessories, buying medicine online has not much popularity due to various reasons. Some research has been conducted on this very topic and they showed the poor situation of online medicine businesses but it was noteworthy that people are becoming more and more interested in purchasing medications online given that the sellers can meet up their expectations and demands.

András Fittler, Róbert György Vida, Mátyás Káplár and Lajos Botz(2018) conducted research on Hungarian patients about their perceptions and experiences with online medicine service. According to their results, 872 (82.65%) of the respondents were aware that medications could be obtained online, while only 44 (4.17%) used the internet for the purchase of medication at least

once. However, this number is likely to increase in the future as numerous patients were open to prospective online purchases: 100 (9.47%) stated they were very likely, and 146 (13.83%) noted that they were likely to purchase medications online in the future. According to the research of Kapil Sharma and Rinki Sharma(2016), shopping for medicines and other medical products has a great scope and lots of advantages over traditional shopping such as-save money, time and fuel, easier and faster way to purchase medicines, and many more.

However, the average age of the respondents in this particular research is 45(András Fittler, Róbert György Vida, Mátyás Káplár and Lajos Botz,2018, table 1) but it is very evident that the younger generation is more likely to buy from online platforms than the older generations. Millennials, those consumers aged 18 to 34, remain the key age demographic for online commerce, spending more money online in a given year than any other age group. Hence, it can be said that the outcome of this research would be different and the numbers would be much higher if the same research could be conducted among younger people. Moreover, the report stated that nearly half (456/1055, 43.22%) of the respondents reported having chronic health conditions, and a majority reportedly used at least one medication regularly. So they were in constant need of medications, unlike most people, and maybe healthier people who do not need medications as much as those respondents would be less interested in purchasing medicines from online platforms.

However, purchasing medicines online has some disadvantages too like-urgent medicines cannot be ordered online because customers do not have the luxury to wait for their order to arrive when a patient is on the deathbed, and there can be confusion and mistakes ordering the right products due to human error from both sides (Kapil Sharma and Rinki Sharma,2016). Overall, the research of K. Sharma & R. Sharma shows a good, complete picture of what online medicine business can be with its drawbacks. However, they failed to show any statistical data to back up their claims and it is unclear whether they conducted a survey to obtain any data or not as they did not present any. Here the research loses its weight and credibility; nonetheless, it presents a clear and good picture of how purchasing medicines online can be a big thing in the future.

Bangladesh is currently home to 8.4 million diabetics(The Daily Star, September 17, 2015). Some of them are in constant need of various medications, like insulin and it's not always possible for them to purchase medicines at troubled times by physically going to the drug stores. And online medicine platforms can be very crucial and helpful in such cases.

Written by the author A S M Shyam Reza

6. Methodology

One of the main targets of this paper was to find out the reasons behind the underwhelming popularity of online pharmacies, even in such a challenging setting due to the global coronavirus pandemic. Since collecting data from door to door was not an option due to the lockdown, an

online survey was created with questions that we found to be relevant to the acceptability and public opinion of online drugstores. Also, another source of information was directors and senior distribution officers of online drugstores like Khidmat Drug Outlet.

The participants of the survey were 113 people ranging from students to jobholders, businessmen, teachers, doctors aged from 18 to 65. There were questions about whether or not they've ordered from online drugstores, how the experience was, how expensive it was and what problems they've faced while ordering or receiving the products, and lastly whether they would be more confident in purchasing meds online if they're given discounts or ensured certain quality assurances.

To get a better grasp of the supply chain, the director of the leading online drugstores has been contacted and interviewed. The questionnaire for them included what challenges they face while conducting their business, whether the pharmaceutical companies are cooperative of their business, what the infrastructural limitations they're trying to overcome, and whether they would be willing to collaborate with other players in the field to ensure a better experience for the end-user.

The survey was conducted in two parts. In the first part, the questions were mostly related to the experience and/or familiarity with online drugstores and the possible reasons behind them. After carefully analyzing the results, another survey was conducted with the possible changes/solutions that might affect the decision of a potential buyer to buy medicines from online stores. We identified 8 such factors that can affect the decision of a consumer and asked whether they agree or disagree with the statements. A numerical scale was provided with each question where 0 means strongly disagree and 5 means strongly agree.

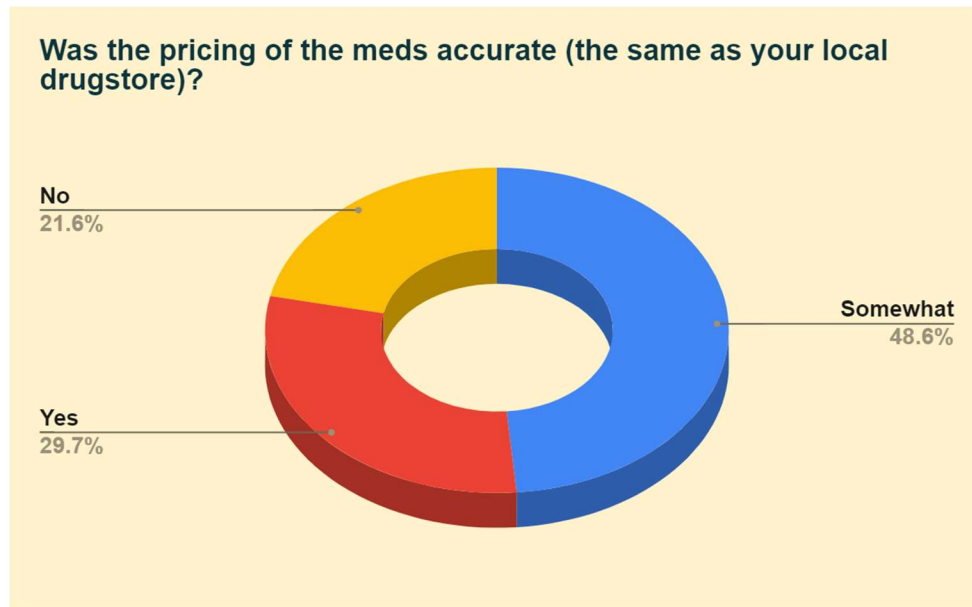
The results of this survey were then used to conduct a wide range of statistical analysis including factor analysis, Chronbach's alpha, principal component analysis, etc. to find out inherent patterns that might reveal important insights to consumer behaviour towards online pharmacies and possibly point us towards a solution.

Written by the author Abdullah Jubair Bin Iqbal

7. Problem Statements

A few weeks earlier, we did a survey where we took customers' experiences and reviews on online medicine. They have shared the challenges that they have faced.

7.1. Inaccurate Pricing

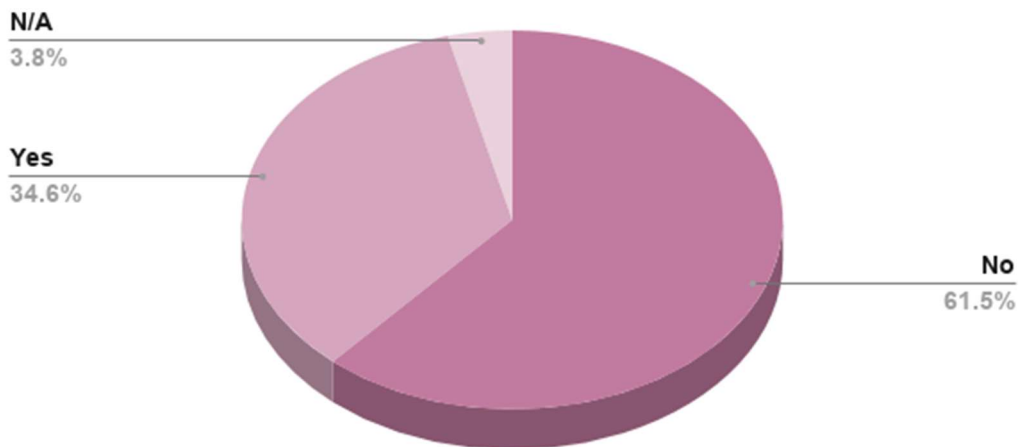


Most of the local offline drug stores offer discounts for buying from them, especially on medicines that are manufactured in Bangladesh. However, in online drugstores, this is not the case. Most of the online drugstores are struggling to keep their business above water, hence, it is almost impossible for them to offer discounts.

On top of that, the websites of those online stores are not very intuitive and are not updated regularly. As a result the pricing is not up to date on most of them. And according to our survey, a great number of people have found some irregularities. This might be one of the reasons why people do not really prefer online medicines stores.

7.2. Lack of Supervision and Safety Measures

Did they ask for your prescription?



Some online medicine corners never ask for a medical prescription while buying from them. So, there are some possible chances that anyone can buy forbidden drugs from an online pharmacy. Experts say there is no proper technical infrastructure in place to monitor the sale of online drugs. Those who complain against online pharmacies say that they encourage self-medication, customers make illegal purchases of habit-forming drugs, prescriptions are not verified online and patients buy drugs without original prescriptions. “Sometimes, medicines sold online without prescription may be counterfeit, have no active ingredients, and may even contain harmful ingredients,” said doctors. Some medicines are extremely prohibited for random buying and those are not allowed to sell in the pharmacies in our areas. But, these are likely to be used for intoxication.

7.3. Faulty Delivery System

The delivery system for online medicine is not up to the mark in our country. Customers often make complaints about the late arrival of their required products. Many customers have expressed the reason not for buying online is late delivery. If they can get the products from local drug stores near their houses, why would they wait for online delivery?

While talking about the delivery system of drugs with a renowned drug outlet owner Dr. Mohammad Shakiluzzaman, he narrated, “Bangladesh has not made any progress in the online pharmacy industry yet. So, it is the major challenge so far. While delivering the product to consumers, we need to maintain certain precautions. There’s been a huge difference between medicine delivery and other product delivery. Drugs can’t be delivered by anyone or any 3rd party.” Selling medicine online and delivery are two different businesses. He also added that “We are drug sellers. There will be a need for more manpower if we start delivering by our own

manpower. But it isn't possible for most of the ventures. Delivery men often don't want to deliver in unknown areas. Mostly they deny delivery after evening.”

On top of that some medicines are very fragile and temperature sensitive. So a typical motorcycle setup might not ensure quality delivery to the customers. And incidence of receiving broken, or damaged medicine is not very uncommon.

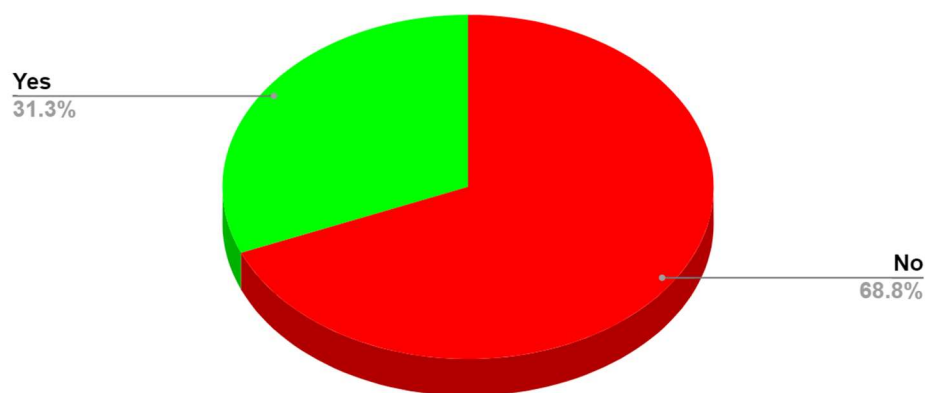
7.4. High Delivery Charge

Most online drugstores are based on one or two physical outlets and only a few delivery vehicles. So for long-distance deliveries, the vehicles have to cover a long distance and that increases the expenses of the drugstores which consequently raises the delivery charge. So when faced with a situation, people generally prefer to get the medicines by themselves from their local stores instead of paying a high delivery charge. This is one of the leading causes of people's aversion to buying medicine online, despite quality assurance. Suppose, if an online drug outlet is located at Dhanmondi, they often don't want to take orders from places like Uttara, Jatrabari because customers may not get interested in paying high delivery charges.

7.5. Limited Stock

Since most of the online drugstores rely on one or two physical outlets or warehouses, they run out of stock for various medicines pretty quickly. As a result, when a potential consumer tries to order medicines online, s/he might find the required meds to be out of stock.

Were you able to find all the meds you need?



According to our survey, 68.8% of people reacted to Yes. It is an enormous problem for customers and lacks in online drug stores' supply chain management.

This limited stock is partly due to the underwhelming demand for online medicine services compared to their offline counterpart. “When we place an order from our manufacturers, they are

unaware of their stocks. They show that the drugs are available but actually it wasn't. So, the products may take a little delay to come to our shop or warehouse. Limited stock problems start from here", said the owner of Khidmat Drug Outlet.

7.6. Risk involved In Buying Online and Consequences

Sadia is a single mother and corporate lady. She lives in a house with her 2 years old daughter. Suddenly she was in need of medicines that she did not find in a local pharmacy near her home. It's not possible for her to step out right now leaving her daughter alone at home. So, she decided to buy online. The products arrived on time and everything was pretty good as she wanted.

On the other hand, Anila has ordered some products along with insulin for her mother with extra charges than local stores. All the products came two days later. When she unboxed the product, she noticed that insulin got damaged because of the temperature and other medicines turned out to be fake and expired. So, it's clearly seen that there's a certain gap in the online medicine delivery system and sellers value chain for that Anila had to experience the bitter side. Also, due to less temperature-controlled vehicles, temperature-sensitive medicines got ruined during delivery.

While shopping on the internet in Bangladesh has proved to be a boon for customers like Pimi. On the other hand, Anila paid extra charges than usual for medicine, got fake and damaged products as well as late delivery. Doctors have mixed opinions on buying medicines online. While there are benefits, one should not overlook the risks involved, they say.

Written by the author Kazi Aklima Sultana Urmi

8. Proposal

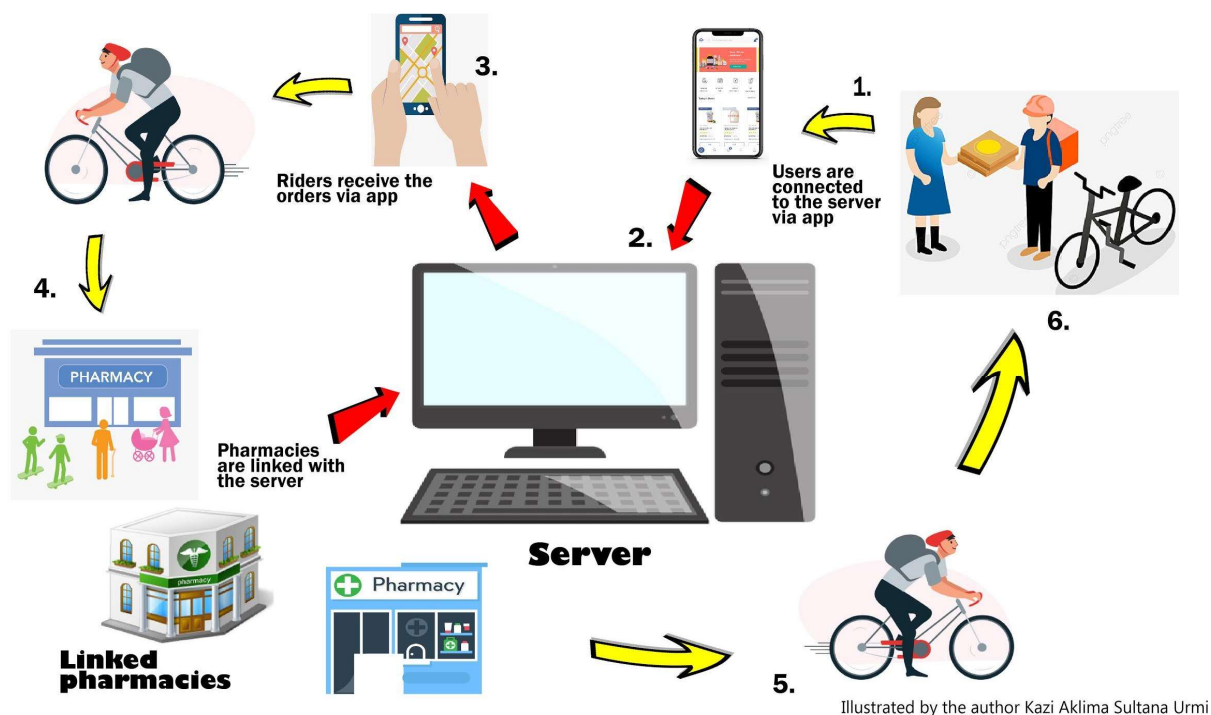
Online medicines are the best startup anyone can start. There are certain complications for which online medicine ventures can't grab the market. Customers have trust issues on its value chain. In fact, the owners themselves have been facing challenges for their supply chain. Improper delivery systems like lack of manpower, vehicles, freezing vehicles so far have been the major complications in delivering the drugs. Considering the phenomenon, we have come up with real-world solutions.

8.1. Drug Dedicated Delivery: Medicine Bank

Drug dedicated delivery means there will be a separate medicine concerning delivery system for the drug or create a separate delivery segment in the existing delivery companies where customers can monitor or track their products via the app. Medicine will be delivered by the authorized delivery companies who mainly focus on medicine deliveries. So, the whole idea will work as a Medicine Bank.

There are almost over a hundred online pharmacies in Bangladesh right now. All the authorized online pharmacies and physical drug stores will be linked with the main server. Customers will place their orders via mobile app or directly from the website of the server. When customers search for any medicines, they will get to see a few nearby stores in which their required medicines are available. They will be asked to provide the prescription for certain medicines which won't be given without prescription. They can buy fast aid medicines without prescription. So, after placing the order, the server will receive the order first. Then, it will be given to a delivery man who is nearby the location and associated with that drug concerned delivery company. The delivery man will call both the drug stores for the availability and the customer for the confirmation. The delivery will be reached within 30 mins to the destination.

Now, talking about the prices of the medicine. Prices will be the same as offline drug stores. Since several shops are connected, customers will be able to verify the price. But the price will be less than the offline drug stores sometimes due to the discounts Medicine Bank will offer. Delivery charges will be reasonable. Incase of emergency medicine service like late night delivery, raining outside, medicine for deathbed patients, delivery charges may vary but not exceed 100 BDT. it's also applicable if the delivery man has to go far from the location to search for required medicines in pharmacies.



From the picture, the whole process is clearly seen.

Step-01: Users will place their orders via the app. Throughout the time users can monitor or track their orders via app.

Step-02: The order will be saved in the server and they will start to find any nearby riders.

Step-03: One rider from the drug concerning delivery company will receive the order and for confirmation s/he will make a call to the user and confirm it.

Step-04: Rider will head to the specific pharmacy where the required medicine is available.

Step-05 & 06: Rider will pick up the medicine from the pharmacy and deliver it to the customer's destination.

8.2. What Does This Idea Solve?

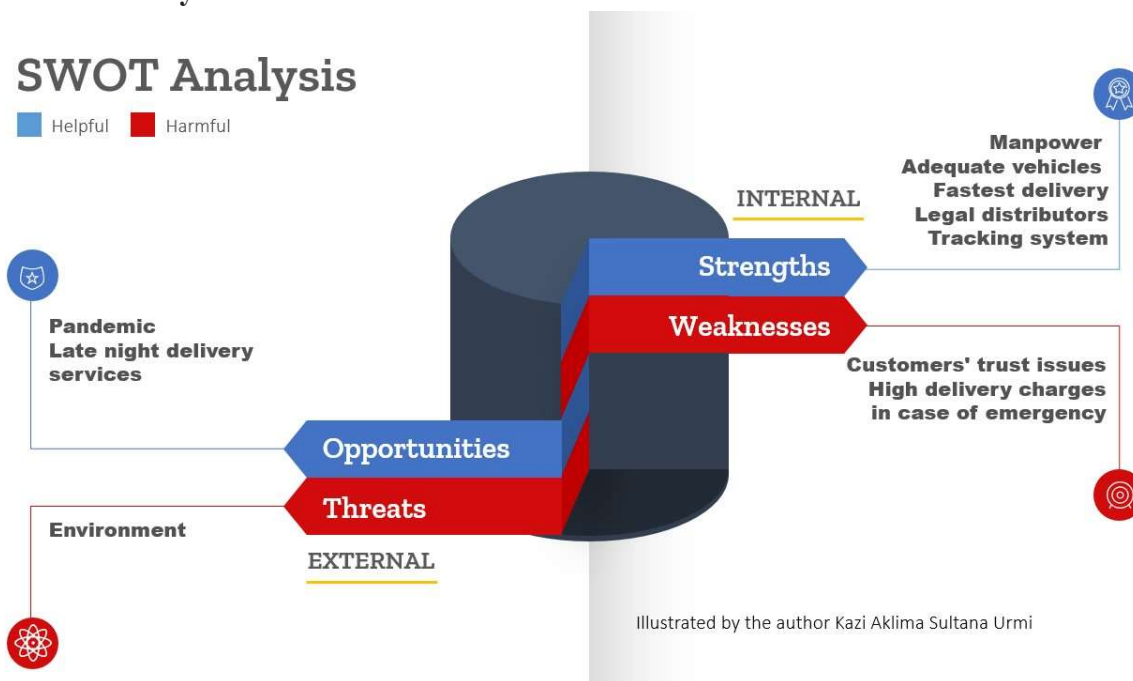


Illustrated by the author Kazi Aklima Sultana Urmi

Now, a question may appear, how does this idea solve the challenges? Current drug delivery system can't afford fast drug delivery whereas Medicine Bank ensures the fastest drug delivery. When a patient needs emergency medicine and the required drugs are not available in nearby local stores, this idea is beneficial in this case too because the customers will get the drugs within 30 minutes. If the concept is established, it will reduce our time from going to the physical medicine shop. There will be less chance of fake products because the company will only be affiliated with legal distributors, and drugs won't be delivered by a 3rd party dealer. In the current system, customers don't have the idea how their products are coming and are they maintaining proper safety measures or not. But due to the tracking system, customers will have access to monitor their orders. Conventionally an online drug store depends on one store. Since it works like a Medicine Bank and many drug stores are connected with the server, it solves limited stock challenges. Prices will be the same as offline drug stores or can be less than due to the discounts. Temperature-

sensitive drugs will be delivered in temperature-resistant vehicles maintaining proper precautions. So, the total process will be hassle free.

8.3. Sustainability Measurement



SWOT analysis is a simple process to design an organization's framework by analyzing its strength, weakness, opportunities, threats. A SWOT Analysis was done to make a summary of external and internal factors of the Medicine Bank proposal to prove the concept sustainable. All the helpful factors like strengths and opportunities of the medicine bank concept have been discussed earlier. Customers' trust issues, high delivery charges for emergency delivery services are pointed as weaknesses. Since this online drug service is a new trend in BD, it's quite normal to have trust issues. If it is promoted interestingly in different media, and the quality of the medicines can be maintained, this weakness can be overcome. According to our survey, many customers responded positively to paying high delivery charges in case of emergency services like late night, rainy day, deathbed patient service. Now, coming to the threats, the only threat of Medicine Bank is the environment. It will be tough to deliver the drugs if the weather gets worse or in any natural calamities. But it doesn't happen all the time.

This proposal is our very own solution, and is being worked by us right now.

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9. Data Analysis & Results

The second survey was done to identify which factors will affect a consumer's decision to buy medicine online. Eight factors were identified and the participants were asked to rank them from 0 to 5, where 0 means they think that the factor will not affect their decision and 5 means that the factor will surely affect their decision. Statistical summary of the second survey is given in the table below. :

<i>Variable</i>	<i>Observations</i>	<i>Obs. with missing data</i>	<i>Obs. without missing data</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. deviation</i>
<i>Authenticity</i>	100	0	100	2.000	5.000	4.240	0.842
<i>Quality control</i>	100	0	100	2.000	5.000	4.160	0.762
<i>Easy billing and returning policy</i>	100	0	100	3.000	5.000	4.300	0.772
<i>Discounts</i>	100	0	100	3.000	5.000	4.330	0.766
<i>Faster Delivery</i>	100	0	100	3.000	5.000	4.290	0.671
<i>Convenient ordering process</i>	100	0	100	3.000	5.000	4.320	0.695
<i>Ensured availability</i>	100	0	100	2.000	5.000	4.220	0.811
<i>Guaranteed Delivery</i>	100	0	100	3.000	5.000	4.310	0.706

Covariance matrix:

The covariance matrix is calculated to visualize positive and negative correlations among the parameters we've found. This covariance matrix will later be used to find out the principal components of the data.

<i>Variable s</i>	Authenti city	Qualit y contro l	Easy billing and return ing policy	Discou nts	Faster Delive ry	Conveni ent orderin g process	Ensure d availabi lity	Guarant eed Delivery
<i>Authenti city</i>	0.709495	0.547	0.069	0.092	0.112	0.114	0.118	0.127
<i>Quality control</i>	0.547	0.5802 02	0.093	0.108	0.135	0.130	0.166	0.142
<i>Easy billing and returning policy</i>	0.069	0.093	0.5959 6	0.557	0.084	0.075	0.135	0.098
<i>Discount s</i>	0.092	0.108	0.557	0.5869 7	0.095	0.095	0.139	0.109
<i>Faster Delivery</i>	0.112	0.135	0.084	0.095	0.4504 04	0.219	0.350	0.424
<i>Conveni ent ordering process</i>	0.114	0.130	0.075	0.095	0.219	0.48242 4	0.151	0.193
<i>Ensured availabil ity</i>	0.118	0.166	0.135	0.139	0.350	0.151	0.65818 2	0.456
<i>Guarant eed Delivery</i>	0.127	0.142	0.098	0.109	0.424	0.193	0.456	0.498889

Eigenvalues:

The Eigenvalues of the data are given in the matrix below. The eigenvalues represent the variance of the data along the corresponding eigenvector. Since, there are 8 variables, we get 8 eigenvectors, each corresponding to a lesser degree of variance.

	F1	F2	F3	F4	F5	F6	F7	F8
<i>Eigenvalue</i>	3.377	1.699	1.539	0.786	0.331	0.145	0.067	0.057
<i>Variability (%)</i>	42.207	21.239	19.232	9.820	4.143	1.808	0.835	0.717
<i>Cumulative %</i>	42.207	63.445	82.677	92.497	96.640	98.449	99.283	100.000

The scree plot shows that we get almost 83% variance from the first 3 components, and these factors will adequately represent the data. However, with a little more manipulation, we can visualize the data to give us some clarity on the matter.

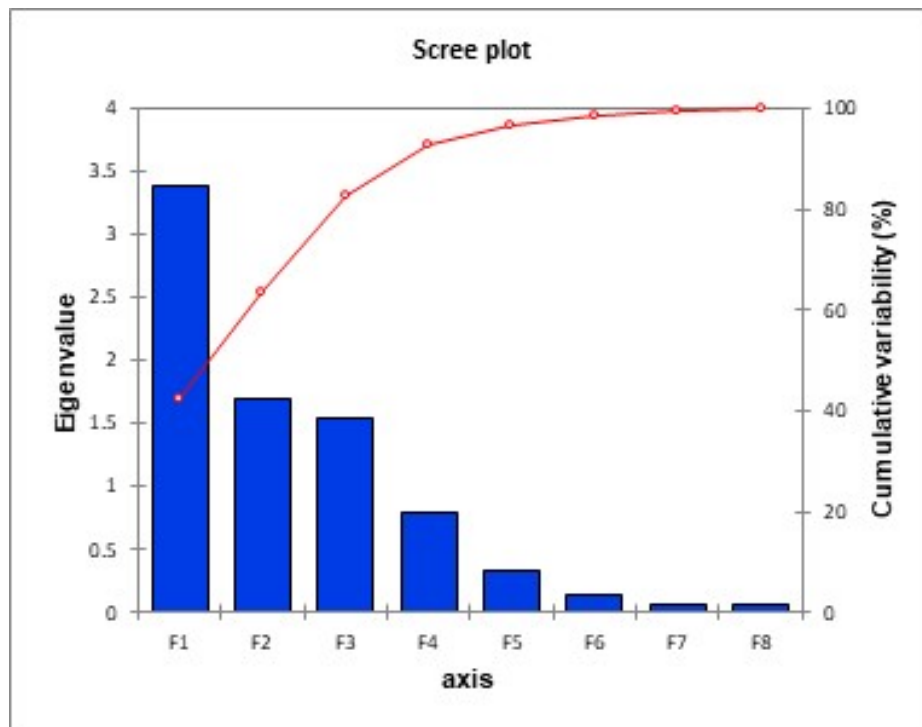


Figure: Scree plot

Factor pattern:

The following table will reveal how the variables we've chosen contribute to the factors we've just found out.

	F1	F2	F3	Initial communality	Final communality	Specific variance
<i>Authenticity</i>	0.507	0.008	- 0.818	1.000	0.926	0.074
<i>Quality control</i>	0.583	0.002	- 0.763	1.000	0.922	0.078
<i>Easy billing and returning policy</i>	0.488	- 0.839	0.167	1.000	0.971	0.029
<i>Discounts</i>	0.518	- 0.825	0.144	1.000	0.970	0.030
<i>Faster Delivery</i>	0.816	0.344	0.276	1.000	0.860	0.140
<i>Convenient ordering process</i>	0.557	0.140	0.038	1.000	0.332	0.668
<i>Ensured availability</i>	0.763	0.240	0.270	1.000	0.712	0.288
<i>Guaranteed Delivery</i>	0.846	0.343	0.298	1.000	0.921	0.079
<i>Values in bold correspond for each variable to the factor for which the squared cosine is the largest</i>						

As we can see from the table that the first factor is affected by faster delivery, convenient ordering process, ensured availability and guaranteed delivery. The second factor is affected by the billing process and discounts and the third factor is affected by the authenticity and quality control.

Cronbach's alpha:

A simple Cronbach's alpha test reveals the adequacy of the first three factors to describe the problem.

	Cronbach's alpha
<i>F</i> <i>1</i>	0.845
<i>F</i> <i>2</i>	0.970
<i>F</i> <i>3</i>	0.920

As we can see, all the factors here have really good alpha values of alpha, indicating that the factors are indeed enough to represent the situation adequately.

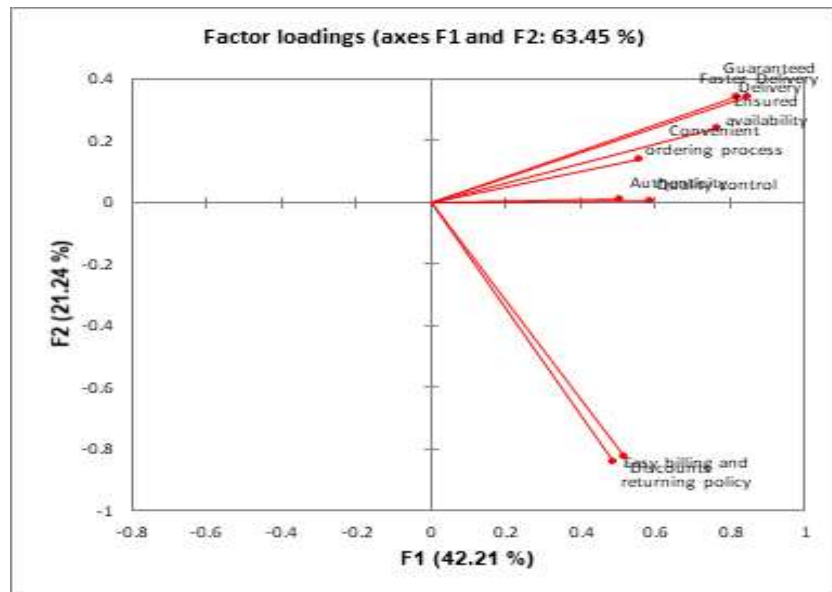


Figure: Factor Loadings (axes F1 and F2: 63.45 %)

Since the results might still be somewhat incomprehensible, we apply a rotation to better understand the situation.

Results after the Varimax rotation:

Rotation matrix:

	D1	D2
D1	0.894	0.449
D2	0.449	-0.894

Percentage of variance after Varimax rotation:

And we can see from the following table that after the rotation, we still retain 63% of the total variance.

	D1	D2
Variability (%)	37.982	25.464
Cumulative %	37.982	63.445

Factor pattern after Varimax rotation:

	D1	D2
Authenticity	0.457	0.220
Quality control	0.522	0.260
Easy billing and returning policy	0.059	0.969
Discounts	0.092	0.970
Faster Delivery	0.883	0.059
Convenient ordering process	0.561	0.125
Ensured availability	0.789	0.128
Guaranteed Delivery	0.910	0.073

Values in bold correspond for each variable to the factor for which the squared cosine is the largest

From the table above we can now see that authenticity, quality control, faster delivery, ensured availability and delivery affect the first factor, while the second factor still resembles the cost competitiveness, ie, it is still affected by discounts and ease of billing and returns.

The graph below makes everything clear.

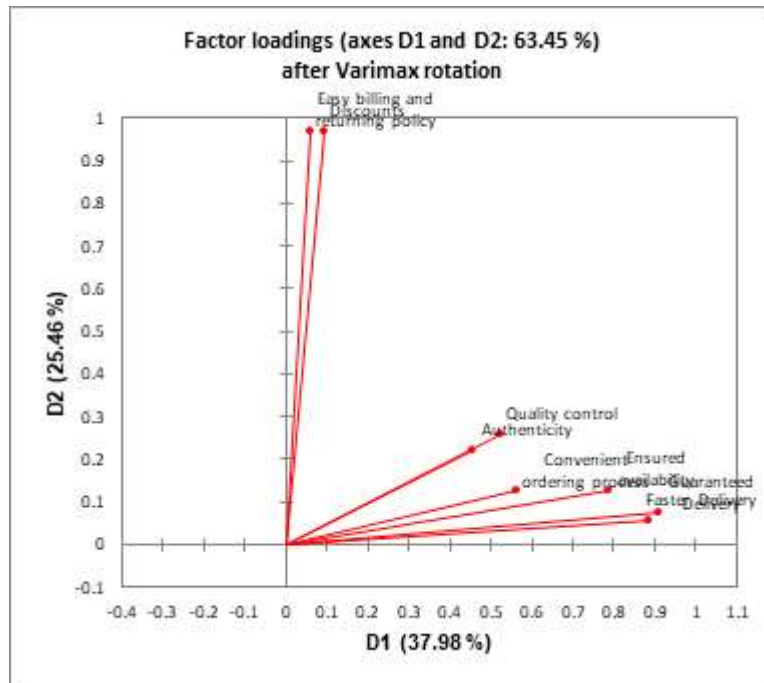


Figure: Factor loadings (axes D1 and D2: 63.45 %) after Varimax rotation

Cronbach's alpha:

Cronbach's alpha

<i>D1</i>	0.806
<i>D2</i>	0.970

Re-calculating Cronbach's alpha for the new factors reveal that they're still a good representation of the data.

Written by the author Abdullah Jubair Bin Iqbal

10. Interpretation

The results suggest that the efficacy of the online medicine stores depends on factors that can be mainly classified into two groups:

- a. Convenience
- b. Cost Competitiveness

10.1. Convenience:

In order for online drugstores to survive, we need a comprehensive and convenient ordering and delivery process that is easily accessible to the masses. The ordering process should be easy, seamless and effortless and the delivery should be fast and guaranteed.

The factors that contribute to the convenience of the whole process are: authenticity and quality control, guaranteed and fast delivery, easy ordering process and ensured availability of the medicines.

Now a lot of these can be addressed by a well designed app and a dedicated drug delivery service, like the one we've just proposed. A simple, easy to use app will make the ordering process seamless, and with enough manpower, it is possible to ensure very competitive delivery times for the medicines.

The factors finger authenticity and quality control has to do with the online drugstores and the pharmaceutical companies. The online drugstores should have access to authentic and verified medicines from the pharmaceutical companies. To ensure quality control, it must be ensured that the temperature-sensitive medicines are carried in temperature controlled vehicles and also before dispatching any order from the store, it must be cross checked by the delivery person that the medicines are indeed according to the order from the user.

And lastly, to ensure availability of the medicines to the end user, a drug delivery service can play a great role by getting the medicines from stores that have the prescribed medicines in stock. In case of an order where some of the medicines are not readily available, the delivery service can outsource the medicine from another pharmacy if necessary, the end result of which will be a satisfactory online medicine buying experience for the user, where s/he knows that the required medicine will be available, regardless of the circumstances.

10.2. Cost Competitiveness:

A big reason for not buying medicines online is due to the excess cost due to the delivery charges and lack of discounts. With a dedicated drug delivery service, we can standardize the delivery cost for all the drugstores, limiting the probability of being overcharged by a particular store.

On top of that, a big reason why people buy medicines online is because often they offer discounts upto 15% of the total cost. In order for online drugstores to be competitive, they should provide discounts to keep the overall cost down.

Also, another reason why people buy medicines offline is because they can easily return the leftover medicines if the medicines are not expired yet. This facility is not yet available in most of the online stores.

Plus, the payment and billing process is more complicated than necessary. With a simple receipt (digital and printed) and option for both cash on delivery and mobile banking, the billing process can be easily solved. If the customers are given the choice to get refunds for mistaken orders or return their unused medicines using that simple receipt, it'll attract a lot of customers.

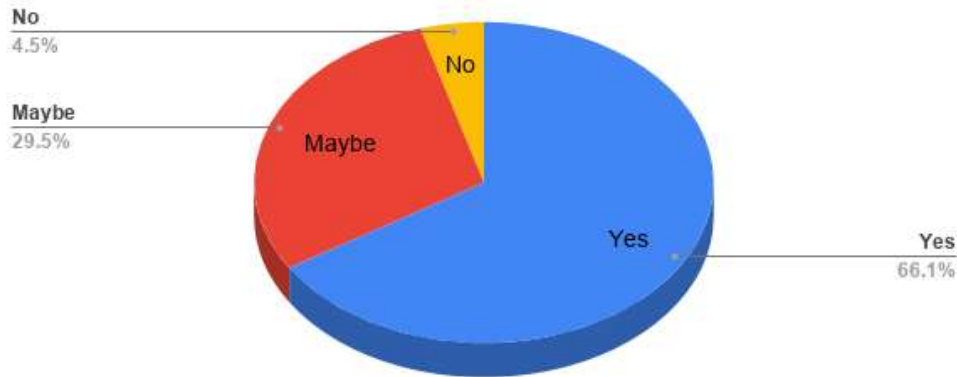
With our dedicated drug delivery system, it's more than doable.

Written by the author Abdullah Jubair Bin Iqbal

11. Evidence

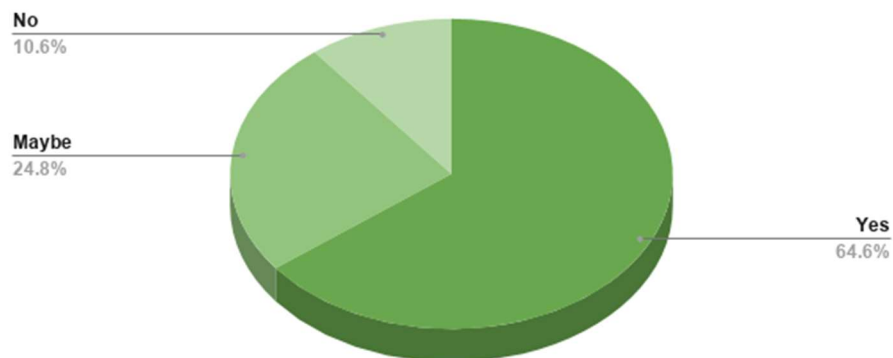
To test our findings, we have done another survey to check whether people are willing to change their minds if our proposal is implemented. Despite the challenges, unsurprisingly, we find that there's a lot of scope in online medicine delivery in upcoming days only if it's managed properly and as per clients' convenience.

Would you be willing to order medicines online if you're guaranteed that the meds will be delivered to you in time?



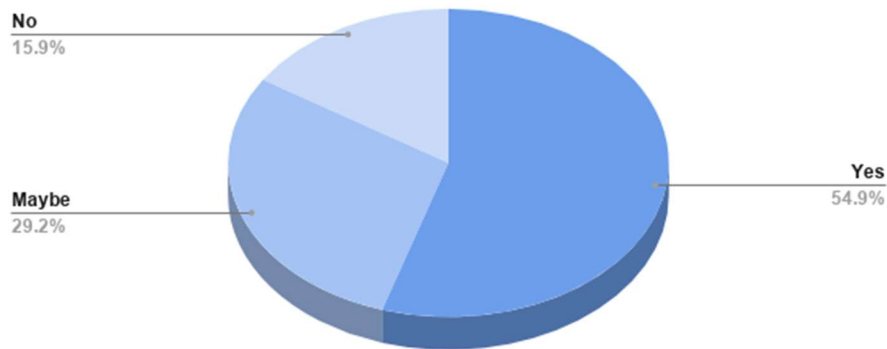
Surprisingly, 66.1% of people responded yes to the question and 29.5% of people showed their interests. It is seen that 4.5% of people are really habituated on using physical medicine stores, and they answered no for this specific question.

Would you be using online medicine delivery services if they offer you a discount for buying from them?



Some drug outlets provide discounts above a certain amount of purchase. Among the 112 participants of our survey, 65.2% of people responded that they will be willing to buy medicine online whereas 24.1% seemed somewhat interested since they responded maybe. Around 10.6% showed zero interest in buying drugs online, and the percentage is very poor compared to the other.

Would you be using online medicine delivery services more if the total cost is competitive with the cost for buying them offline?



Another similar question was placed about the overall cost competitiveness of online drug stores and here is the response we've obtained. 54.9% people responded yes. 29.2% showed their interest and less than 20% people said no because they're habituated to using offline drug stores.

This response was a huge hope for the drug industry of Bangladesh. This survey has shown that online medicine corners have a good future in Bangladesh. People have been accepting this new normal service, and will adopt it in a vast way if the challenges are taken seriously.

Written by the author Kazi Aklima Sultana Urmi

12. Conclusion

Every business has its challenges. The new industry takes time to adjust in the market because customers need time to adapt with the new ideas,solutions. Therefore, to make the business sustainable, it is important to take proper care of what customers are longing for, design the whole model as user-friendly as possible so that customers can experience the easiest and fastest service. And in this modern era, to ensure these vital points, there's no option but applying the modern technologies. This tech solution will prove to be a boon to us because it will make the process

quite smoother than the current situation. If this industry starts using technology rather than the conventional process in every sector to monitor its steps, customers will accept the new normal more.

Written by the author Kazi Aklima Sultana Urmi

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