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Identifying the ways of delivery performance enhancements in Sri Lankan E-commerce Logistics sector with special reference to the Cash On Delivery (COD) method: An Integrative Review

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Abstract - With the prompt growth of sophisticated technological environment, E-Commerce distribution services in Sri Lanka have flourished tremendously. Most logistics and courier companies in Sri Lanka have developed new platforms to step into the modern e-commerce trends to meet the dynamic demands. However, due to the lack of study on real procedures of last mile (LM) delivery has triggered bad reputations and highly dissatisfied customers around the country. Cash on delivery (COD) has been a foremost problem in Sri Lanka's E-commerce delivery systems, hence cash collection and customer rejection rates are much higher, contributing to the cause of both e-commerce vendors and couriers rising costs. Sri Lankan Logistics and Courier companies are still lacking the efficiency; compared to the high standards E-commerce industry has set in the world. Therefore, the purpose of this study is to identify the solutions and strategies for performance enhancements of E-Commerce deliveries with special reference to CODs in order to overcome the associated issues and challenges. This scrutiny has been conducted using an integrative review approach and the literature published in relation to Sri Lankan and Global E-commerce deliveries and COD Services were reviewed. Through the effective categorization and integrative analysis of literature, issues and challenges that are being faced by the e-commerce logistics companies and the solutions and strategies for performance enhancements of e-commerce deliveries were identified in both global and local context. Finally a theoretical framework on COD Services which will be effective to Sri Lankan E-commerce Logistics sector was suggested.

Keywords: E-commerce Logistics, Cash On Delivery (COD), Delivery Performance

1. Introduction

With the prompt growth of sophisticated technological environment, E-Commerce distribution services in Sri Lanka have flourished tremendously. Most logistics companies & courier companies in Sri Lanka have developed new platforms to step into the modern e-commerce trends to meet the dynamic demands. E-Commerce delivery services have been able to offer considerable coverage in Sri Lanka through the connection of local and international markets to everyone's doorstep. Sri Lankan E-Commerce delivery services currently involve in providing a wide range of products and services such as medicines, household items, clothes, toys, numerous raw materials, construction items, small or large machineries, travel facilities, education and many more very fast with reasonable prices to the consumers. Sri Lankan E-Commerce delivery services allows customers to order anything they need remaining their residences. Highly affordable when compared to physical delivery services, offering variety of discounts, providing high quality services and goods, offering various fast and excellence solutions for the delivery can be identified as the reasons for seeking E-Commerce services by Sri Lankan Customers.

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Most of reputable Sri Lankan E-Commerce delivery services offer a variety of solutions in this regard such as 'a fix date delivery', 'collect at your local store', 'Next day delivery', 'same day delivery', 'two hour delivery' etc. In contrast, due to the lack of resources like warehouses, enough stocks, skilled laborers, fast vehicles, updated logistics, and affiliated services, some of the Sri Lankan E-Commerce delivery services are not capable of providing fast courier service such as Same Day Delivery (GTVExpress, 2020). As mentioned in Surf Ship (2019), Simplex Delivery, Domex Courier, Grasshoppers, Aramex, Citypak, Abans courier, EFL Courier and Pronto are few main companies that provide last mile delivery for many E-commerce stores around the country. The online retailers need a lot of effort to find reliable logistics partners that can provide their customers with a smooth and effective distribution of goods. Any customer impression made in last mile deliveries by the service providers can impact future business from the particular customer. Having an instantaneous, trustworthy, and customer friendly, yet cost effective ecommerce delivery service is critical for any logistics company beholding for long term sustainability.

The Cash on Delivery (COD) service has played a significant role in driving the growth of e-commerce in the world. Cash on Delivery is a term used to describe the goods paid upon delivery. This is opposed to the usual pre-payment procedure where goods are purchased and then delivered subsequently. Instantly receiving goods, instead of waiting days or weeks for arrival, allowing the sender to receive instant payment instead of waiting for the credit payment, providing a chance for the customer to review and audit the product prior to making payment to the delivery driver, thereby reducing returns and future customer friction can be identified as the key advantages of COD method. All the major logistics and courier companies over the world serving direct end-customers through e-commerce deliveries consider cash on delivery management as a key transaction method which has sustained its popularity regardless of multiple payment options gaining ground. However, if cash on delivery is so important, many companies still waver with its processes as the COD service has become notoriously problematic area when it comes to on-time and successful deliveries. Cash on delivery has been a foremost problem in Sri Lanka's E-commerce delivery systems also, hence cash collection & customer rejection rates are much higher, contributing to the cause of both e-commerce vendors and couriers rising costs. Sri Lankan Logistics and Courier companies are still lacking the efficiency; compared to the high standards E-commerce industry has set in the world. Consequently Sri Lankan ecommerce logistics sector should take effective procedures to compete with the global high standards E-commerce deliveries in order to achieve the competitive advantage in the industry. Therefore, the purpose of this study is to identify the solutions and strategies for performance enhancements of E-Commerce deliveries with special reference to CODs to overcome the issues and challenges that are being faced by these companies.

2. Methodology

A research methodology which was suggested in (Snyder, 2019) has been followed in this study. This methodology consists four phases; (1) designing the review, (2) conducting the review, (3) analysis and (4) writing up the review.

2.1 Phase one - Designing the Review

In this phase, the need for conducting the literature review was identified. Cash on delivery has been identified as a foremost problem in Sri Lanka's E-commerce delivery systems and Sri Lankan Logistics and Courier companies are still lacking the efficiency; compared to the high standards E-commerce industry has set in the world. Therefore, the purpose of this study is to identify the solutions and strategies for performance enhancements of E-Commerce deliveries with special reference to CODs in order to overcome the issues and challenges that are being faced by these companies. Based on this research question, among the different types of literature reviews, integrative research approach has been selected as the most appropriate approach due to the factors such as requiring a more creative collection of data, reviewing and producing the contents, selecting a narrow topic (CODs), reviewing not only research

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articles but also books, and other published texts in websites, analyzing the qualitative data and developing a theoretical framework as the outcome. The approach of integrative review is used because the purpose of this review is not to cover all articles ever published on the topic but rather to combine perspectives to create new conceptual framework.

Once the research question has been identified and an overall review approach considered, a search strategy for identifying relevant literature were developed. The search terms were selected based on words and concepts that are directly related to the research question such as Cash on Delivery Services, E-commerce Deliveries, Performance measurements in E-commerce deliveries, Issues and Challenges in Ecommerce deliveries and etc. Since the e-commerce deliveries is a drastically evolving topic with the sophisticated technology advancements, articles which are published during the 2010 – present were considered. Since the limited number of research article related to Cash on Deliveries, articles on E-commerce deliveries also considered. Not only journal and conference papers but also lots of articles published in E-commerce sites and white papers were considered to get more information on issues, challenges and performance levels in the current context of ecommerce logistics sector. Due to the limited number of research in the Sri Lankan context, issues of other developing countries are also considered. The articles on E-commerce without due considerations on the delivery practices and performance were excluded from the study (14 articles). Finally this study has reviewed the content of 30 selected articles.

2.2 Phase 2: Conducting the Review

After deciding on the purpose, specific research questions, and type of approach, the actual review was conducted. At the initial step, articles were selected reading abstracts and the final selection was made by reading full-text articles later. Once this is done and the initial articles have been collected, the texts should be screened in full to ensure they meet the inclusion criteria. In addition to that, references in the selected articles were scanned to identify other articles that may potentially be relevant to the study.

2.3 Phase 3: Analysis

After conducting the literature review and deciding on a final sample, an analysis was conducted. In accordance with the purpose and research question of the review, data was abstracted in the form of descriptive information such as issues and challenges of ecommerce delivery sector and solutions and suggestions on performance enhancement of ecommerce deliveries. The findings of these two main categories were summarized in two tables. Specially, data were analyzed with special reference to the cash on deliveries (COD) and logistics and courier service providers.

2.4 Phase 4: Writing the Review

When writing the review, the motivation and need for the review was clearly communicated. This final review article has been organized including five main sections such introduction, methodology, literature review, discussion and conclusion.

3. Literature Review

3.1 E-commerce Deliveries in the Sri Lankan Context

This section discuss the findings of reviewed articles on E-commerce deliveries in the Sri Lankan Context. Logistics can be quite a challenge for an e-commerce platform in Sri Lanka. As stated by (Howson, 2017), the core focus of Takas which is one of the famous ecommerce platforms, now is getting products delivered to customers quickly. This company have developed their own solution that handles everything from the pickup process to the delivery and gives them a pretty big advantage in delivery times (Howson, 2017). Based on a survey conducted by Dias & Ranwala (2015) on determinants of consumer

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satisfaction on e-procurement/ online purchasing in Sri Lanka, it has been identified that most consumers are dissatisfied with response time, security, privacy, transaction ability, delivery speeds, and customer service after sales. Further, this study has suggested recommendations to enhance the online purchasing/ e-procurement in Sri Lanka such as development of local online websites, secure delivery of packages, video facility for product description and introducing “cash on payment” method. Low-quality or expensive transportation options such as trucks, aircraft and trains can affect the cost and speed of delivery of products purchased and sold online, whether exporting or importing. Edirisinghe (2013) has identified the key reasons for low level of service delivery performance in Sri Lankan context from the international logistics perspective. According to that, the low level of service delivery performance was mainly attributed to the factors such as, the absence of dry port facility; usage of rail road for cargo movement is at negligible level; on-line booking systems are not utilized extensively; low domestic volume potential of the Port; inconsistency in operational productivity in the supply chain; issues related to feeder network availability to cover all destinations/origins. Consequently, it can be concluded that above identified factors may directly or indirectly influence the delivery performance of e-commerce deliveries also.

3.2 E-commerce Deliveries in the Global Context

“In online environment timely and reliable delivery play critical role to meeting customer’s expectations and make them satisfied” (Ziaullah & Yi Feng, 2014). The reliable delivery denotes to the delivering right products without defects and packaging the product safely; and meeting the promised delivery schedule to satisfy customers’ requirements (Ziaullah & Yi Feng, 2014). Lekovic & Milicevic (2013) have discussed the importance and characteristics of logistics in electronic commerce and distribution sector has been identified as the biggest obstacles to further development of e-commerce. Among the critical factors impact on online customer satisfaction which were identified by Lin, Wu, & Chang (2011), delivery quality has been identified as the most important factor and followed by product quality. This study suggested that more attention need to be paid by e-commerce operators on the product sourcing, and cooperate with the delivery supplier to provide a higher delivery quality such as correct order, on time, and safety package (Lin, Wu, & Chang, 2011). Wilson & Christella (2019) also conducted similar study to identify the factors affecting customer satisfaction in the the Indonesian E-Commerce Industry. This study revealed that delivery performance has positive effect toward the customer satisfaction. “There is a high chance that consumers will be more disappointed if companies fail to ensure the reliability regarding the delivery system of the product rather than when the website used to access the web services of the company failed” (Wilson & Christella, 2019). For the problems related to home delivery, Oliveira, Morganti, Dablanc, & Oliveira (2017) represented a solution called as Automatic Delivery Stations (ADS) to reduce mislaid deliveries and consolidate parcels drop-off, minimizing the kilometers travelled, and the costs of urban goods distribution. According to this study, ADSs are usually located in residential areas, shopping malls, public transport stations, within stores and business centers, as well as in public areas where many clients can access them through short distance trips. Therefore this delivery option contributes to raise both consumer satisfaction and last-mile delivery optimization (Oliveira, Morganti, Dablanc, & Oliveira, 2017).

Based on the data derived from customer feedback available in eBay-e-commerce website, Ramanathan, George, & Ramanathan (2014) conducted an exploratory study to understand how customers view logistics performance in deciding performance of sellers in e-commerce. As a result of this study, it has been revealed that the importance of logistics services increases as risk characteristics of products decreases from high to low. Ziaullah & Yi Feng (2014) reveals that product quality and delivery services such as product variety, quality, availability, reliable delivery, package safety and timely delivery directly influence e-satisfaction and e-trust in China Online Market. Among the two usual ways for parcel distribution in “the last mile” such as Home delivery and customer pick-up, Home delivery is the commonly used method of most e-commerce websites in China (Xu, Hong, & Li, 2011). This study have introduced the concept of collection and delivery point (CDP) created by overseas logistics companies and have formulated construction schemes for application in China. Unni, Nair, & Gunasekar (2015) identified

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the factors which determine the perceived satisfaction among online shoppers with regard to the delivery time featured offered by the e-retailers. “Minimizing the delivery time of the order has turned out to be one of the most important factors in achieving customer satisfaction” (Unni, Nair, & Gunasekar, 2015). The survey result of this study indicated that features such as express delivery feature will increase the overall customer satisfaction of e-retailer customers in India. A white paper of World Economic Forum (2018) focused on global logistics systems, both in terms of the industry evolution in response to e-commerce as well as specific challenges that need to be overcome to ensure that the benefits of global e-commerce. This paper has given a substantive focus on issues relating to the physical delivery of goods bought online.

3.3 Cash on Delivery Method

The Cash on Delivery (COD) service has played a significant role in powering the growth of e-commerce in the worldwide. “Cash on delivery is the process of shoppers paying for a product in person on its delivery. If the COD buyer fails to make the payment, the product is returned to the seller” (Dudharejia, 2018). “The recipient can make payment by cash, certified check or money order, depending on what is the shipping contract stipulates” (JetEx, 2018). All the major logistics and courier companies over the world serving direct end-customers through e-commerce deliveries consider cash on delivery management as a key transaction method which has sustained its popularity regardless of multiple payment options gaining ground. “This is sometimes called “post payment” system because the customer receives goods before making a payment” (Pencarelli, Skerhakova, Taha, & Valentiny, 2018). It has been statistically proved that E-commerce stores which offer COD services attract more online buyers than the ones who are limited to online payment gateways (courier.lk, 2020). This web site has stated five main reasons to why E-commerce businesses should practice COD services such as Buyers prefer COD than online payment methods, Assurance of receiving money, Promotes impulse purchases, No space for fraudulent refunds and Building trust (courier.lk, 2020). More comfortable with cash payments than digital, Lack of digital payment infrastructures, Lack of trust on online payments and Absence of cyber laws were identified as the reasons for selecting the COD in developing economies (Dudharejia, 2018).

COD as a payment method provides enormous advantages for both consumers and retailers similarly. According to the Ambekar (2011), benefits gained by the customers from COD are Being able to place orders online even without possessing a credit/debit card, Being able to pay when the item has arrived, Reduced chances of online frauds and benefits gained by retailers are Reaching a wider base of customers such as students, housewives etc. who typically do not have a credit/debit card, Offering the service as a differentiator with respect to competition, Simplified business processes; if the customer chooses not to accept delivery, there is no refund as there has been no payment. Similarly, Bhalla (2019) also stated the advantages of CoD such as Flexible payment options for the customer, Ability to check the product and see whether everything is perfect before paying for it, No dependency on payment cards and No online payment frauds. Besides enjoying the advantages of COD transactions, retailers providing this payment option need to be prepared to take on some risks. Since when the goods arrive, the consumer may refuse delivery, the seller may wind up carrying the shipping costs for the returned items (JetEx, 2018). Filling of the invoices with the shippers, Transferring the cash, Handling all the cash daily via the busy schedules of delivery associates are some of the issues involved in COD transactions (LogiNext, 2017). Bhalla (2019) also stated the disadvantages of COD such as Vulnerable to losses - seller vulnerable to losses when the customer returns the product without paying for it and Additional costs - Courier companies charge customer an amount when customer opt for the cash on delivery payment option. Puneet Bhalla (2019) has described the COD process in the context of E-commerce and typically, these e-Commerce companies ship via their logistics or hire a separate logistics partner for delivering consignments and collecting payment. Based on those information, following diagram (figure 01) was created to illustrate the COD process in the context of E-Commerce.

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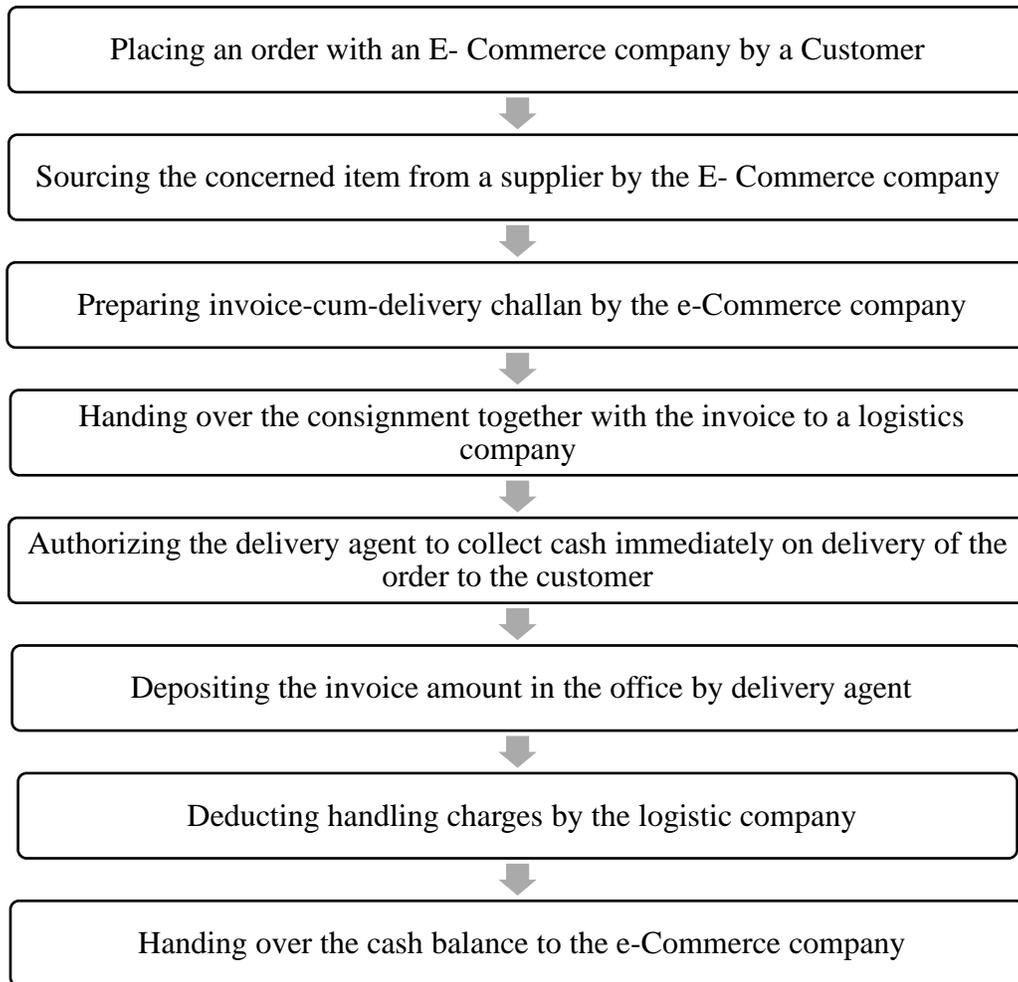


Figure 01. Process of Cash on Delivery in E-Commerce

3.4 Cash on Delivery Services in Sri Lankan Context

In order to identify the current status on Cash on Delivery Services in Sri Lankan Context, the content of relevant websites were reviewed.

Payments have always been one of the main obstacles to online shopping in Sri Lanka. Sri Lanka has made some strides in creating a safer atmosphere for online transactions and acceptance of payments, yet where it should be is still not close (Howson, 2017). Therefore, most developing economies like Sri Lanka tend to have customers with a strong cash preference. Cash on delivery transactions in Sri Lanka is improving Ecommerce and this option is also popular with many younger consumers who don't have a credit card yet and low credit consumers who don't have any other means to pay for online products (JetEx, 2018). "More than 60% of all eCommerce in Sri Lanka is paid for using COD" (DeliveryMalli, 2017). Cash on Delivery can therefore be defined as a feasible marketing choice available with online shops leading increasingly to their high popularity among people. "While participants of global online marketing highly enjoy Cash on Delivery options, the number engages in Cash on Delivery marketing in Sri Lanka is also getting high in recent times" (courier.lk, 2020). Further this site indicates that most of online shops or new companies which are not capable of maintaining their own COD services, hire third party courier services in this regard to provide reliable COD services to their customers and to obtain other value added services

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like return options (courier.lk, 2020). When it is reviewed the websites of logistics and courier service providers, it can be identified that they have been competitively engaging in providing a wide range of COD services to their customers- ecommerce retailers.

3.5 Cash on Delivery Services in Global Context

Currently, 70 to 80% of e-commerce transactions are paid through COD, with the highest online payment in the UAE and the lowest in Saudi Arabia and Egypt (Fallouh, 2019). Most developing economies tend to have customers with a strong cash preference. “Amazon international website also adopted the COD payment to UAE during 2016 acknowledging the popularity and necessity of the payment method in this region” (Fallouh, 2019). “In particular, in sub Saharan Africa, only 34% of residents over the age of 15 have a bank account, and 50% of e commerce transactions are paid by cash on delivery” (World Economic Forum, 2018). COD has become a prevalent mode of payment for online shopping in some of the countries like India, Bangladesh, and Thailand and so on (Bhalla, 2019). More than 50 percent of ecommerce transactions in India, dependent on the cash-on-delivery mode of payment and this system has been designed to attract mainly rural consumers who didn’t have access to digital payment systems (Dudharejia, 2018). As stated in ETNowDigital (2019), Cash on delivery accounts for 65 % of all orders from Indian online marketplaces but One-third of cash on delivery orders from e-commerce websites not delivered. It further noted that COD orders are returned due to several issues. “A non-delivery process starts with the carrier being unable to deliver the customer's order due to his or her unavailability” (ETNowDigital, 2019). Considering the evolving ecommerce sector in India, Kumar (2015) has discussed the role of logistics in ecommerce deliveries by emphasizing the importance of professional logistics services provided by courier and third party logistics providers in order to improve customer retention. This study stated that online stores had to come up with lenient return policies and cash-on-delivery (COD) option to increase customer satisfaction in India.

According to the study of Arora, Srivastava, & Majumder(2017), it is stated that around 80% of customers select for COD and it has led to slower delivery service as each transaction takes extra time to complete. This study discussed the issues related to indian e-commerce deliveries and different modular and customizable solutions conceptualized and evaluated including multiple IOT technologies to allow for continuous improvement of customers’ and Field Executives’ experience of logistics companies. “In the context of demonetization e-commerce giants like Amazon and Flipkart took no time to stop their cash on delivery options and educated their customers about the benefits of e-cash payments”(Jana, 2017). Pencarelli, Skerhakova, Taha, & Valentiny (2018) conducted a study to determine the factors affecting Italian online shoppers in their primary payment method preferences whenever the COD payment option is available. This research has revealed that perceived security, privacy and trust have a significant influence on the customers’ intention to adopt a COD payment method. Further this study found few important facts regarding the COD payment method such as an increase of the frequency of online shopping leads to a slight increase of using cash-on-delivery as payment method, the more important the factor of the online seller’s reputation is, the lower the likelihood of preference for a COD payment method and increases the preference of this payment method is local origin of the online seller (Pencarelli, Skerhakova, Taha, & Valentiny, 2018).

4. Discussion

In this section of the study, issues / challenges in E-Commerce delivery services including CODs as well as the solutions/ best practices and strategies for improving the performance of E commerce logistics which were identified from the literature review were discussed.

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4.1 Issues/Challenges of E-Commerce Logistics & CODs in the Sri Lankan and Developing Countries

While E-Commerce has gained momentum in recent years, there are many challenges for the local industry. From logistics to the lack of customer service, most of these problems still stifle Sri Lanka's e-commerce market. "Cash remains resilient trend that presents a significant challenge to online merchants, especially with operational functions as a collection" (Pencarelli, Skerhakova, Taha, & Valentiny, 2018). Due to the limited research in Sri Lankan context on E-commerce delivery services & CODs, issues and challenges of other developing countries also considered here to enrich the study.

"For efficient functioning of electronic commerce it is necessary to have consistent logistic system that will be support for the electronic commerce system through warehousing, inventory, delivering products, and returning the product that is inadequate" (Lekovic & Milicevic, 2013). With electronic commerce, conventional logistics is evolving drastically. The concept of e-commerce has changed the way logistics operates, which poses new challenges to logistics system performance. Several studies have described the distribution sector as the main barrier to further growth of e-commerce which leads to customer dissatisfaction. "According to a survey of firms using the Inter-American Development Bank (IDB) ConnectAmericas platform, some 35% said that poor logistics were the most serious obstacle to cross-border e-commerce. (WorldEconomicForum, 2018)". "Although internet usage rates in Africa increased by more than 20% in 2017, the development of e-commerce in many countries has been constrained by limited physical connectivity, including poor supply and quality of hard transport infrastructure – even in urban areas – inefficient or uncompetitive logistics services markets" (WorldEconomicForum, 2018).

The Issues/Challenges identified from literature review are summarised in the below table.

Table 01: Issues/Challenges in Ecommerce Logistics

Reference	Issues/Challenges in Ecommerce Logistics
(Surf Ship, 2019)	<ul style="list-style-type: none"> - Lack of integration between warehousing & the e-stores - Lack of stock after a customer makes a purchase
(GTVExpress, 2020)	<ul style="list-style-type: none"> - Lack of resources like warehouses, enough stocks, skilled laborers, fast vehicles, updated logistics, and affiliated services
(Dias & Ranwala, 2015)	<ul style="list-style-type: none"> - Lack of trust on payments, security systems & delivery systems
(Arora, Srivastava, & Majumder, 2017)	<ul style="list-style-type: none"> - Unstructured manpower accentuates theft related problems such as theft and intentional mistakes
(Wilson & Christella, 2019)	<ul style="list-style-type: none"> - Being delay to deliver products or service due to the factors such as traffic, road damage, and weather conditions on certain months. - Damaging packages which may be caused by the trip along the delivering by courier or the company do not check the product before send it to the courier. - Products shipped have to be the same as the graphic and description listed on their website.

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(Edirisinghe, 2013)	<p>Reasons for low level of delivery performance in Sri Lankan context</p> <ul style="list-style-type: none"> - The absence of dry port facility - Port users are not innovative enough in reaping the real potential of Hambantota port. - Usage of rail road for cargo movement is at negligible level - On-line booking systems are not utilized extensively - Low domestic volume potential of the Port. - Inconsistency in operational productivity in the supply chain - Issues related to feeder network availability to cover all destinations/origins - Port handling/stevedoring costs does not permit certain type of cargo to be moved via Colombo
(Xu, Hong, & Li, 2011)	<p>Drawbacks in Home Deliveries</p> <ul style="list-style-type: none"> - High delivery cost for carriers due to the disperse addresses - Difficult to negotiate about delivery time - Inducing unauthorized representatives to sign for deliveries cause legal disputes - Due to the scarcity of pick-up points, customers commonly have to spend much time to get parcels.
	Challenges/ Issues in CODs
(LogiNext, 2017)	<ul style="list-style-type: none"> - Filling of the invoices with the shippers - Transferring the cash - Handling all the cash daily via the busy schedules of delivery associates
(Jana, 2017)	<ul style="list-style-type: none"> - Fraud by cash collection agent - High financial cost in the form of labour - Risky cash handling
(World Economic Forum, 2018)	<ul style="list-style-type: none"> - Handing cash over to the delivery driver incurs a very high return rate, especially on cross-border transactions where the transit time is far longer. - Even when purchases are completed, the cash payment must be transported back to a secure facility by the last-mile operator with corresponding steps thereafter for it reach the merchant.

4.2 Solutions/Best Practices and Strategies Identified from Global E-Commerce Logistics & CODs to Overcome the Identified Issues and Challenges

Solutions/Best Practices and Strategies identified from Global E-Commerce Logistics & CODs were discussed here to overcome the identified issues and challenges.

Alternative approaches such as pick-up points and automated delivery stations (ADSs), have been introduced in Europe and the United States to solve package delivery issues, consolidating the final deliveries at selected locations (Oliveira, Morganti, Dablanc, & Oliveira, 2017). The benefits provided by ADS are (i) customers can collect their products at these points when they cannot be delivered at home (ii) high customer satisfaction (iii) Reducing delivery failure rate and (iv) generating a reduction in travelled kilometers by delivery vehicles (Oliveira, Morganti, Dablanc, & Oliveira, 2017). Arora, Srivastava, & Majumder (2017) conceptualized and evaluated different modular and customizable solutions including multiple IOT technologies, like camera based solutions, BLE beacons, GPS, and recorders, that can be employed to have a multi-point sensing in Last Mile delivery service covering aspects, ranging from Fields

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Executive (FE) attendance, FE’s disposition, track and trace of FEs in turn shipments, and route optimization, customers’ and FEs’ interaction and a feedback mechanism to allow for continuous improvement of customers’ and FEs’ experience (Arora, Srivastava, & Majumder, 2017). As a solution to the ecommerce parcel delivery issues, collection and delivery point (CDP) method has been introduced by many foreign countries (Xu, Hong, & LI, 2011). When it is considered the process of this system, first carriers send parcels to CDP located near the recipients and then contact them to receive parcels from CDP, Customers are allowed to schedule time even in the night to pick up their parcels. This is ideal for special population as an aggregate of traditional distribution methods, such as office workers who have no extra time to collect personal parcels during daytime.

Professional logistics services are in the best interest of E-Commerce companies, resulting in faster growth, profitability and dynamism (Kumar, 2015). Kumar(2015) suggested three main approaches to enhance the delivery performance in the ecommerce deliveries. First, the logistics companies need specialist enterprise mobility software to streamline the operation, which takes care of most of the issues such as monitoring, stock level management, locations, packaging and fulfillment (Kumar, 2015). Second, the logistics providers can use good packaging materials to reduce product damage and include labeling for fragile products with ' handle with care' (Kumar, 2015). Third, in order to create a partnership with the consumer, it is necessary to track the actions of the delivery workers, who can easily deviate from the rules of the company and deliver goods in an untimely manner (Kumar, 2015). “The delivery men should not be overburdened also as their ill-mood can affect the way they communicate with the customer” (Kumar, 2015). LogiNext (2017) site also suggested that delivery management mobile applications should be adopted by logistics companies to enable complete process visibility to track the shipment from the planning, assigning, and dispatching stages to the travel, route optimization, estimated time of arrival compliance, and package handover process. These type of mobile application can be used to manage the time of delivery, customer feedback, payment type, payment record, proof of delivery, and total service time.

In order for COD to grow further, and to support the e-commerce eco-system further, Fallouh (2019) suggested five practices that need to be followed by the courier companies such as: (i) Provide faster remittance of COD amounts to encourage this payment solution for both start up and mature e-commerce businesses, (ii) Revise COD service fees, Improve percentage of delivered COD orders, (iii) COD needs to go cross-border - to masses as part of their plan to gain market share and (iv) Subsidized COD services - to encourage consumers to shop (Fallouh, 2019). The solutions and strategies identified from the literature review are summarized in the below table.

Table 02. Solutions/Best Practices and Strategies for Improving Ecommerce Logistics Performance

Reference	Solutions/Best Practices and Strategies for Improving Ecommerce Logistics Performance
(Oliveira, Morganti, Dablanc, & Oliveira, 2017)	<ul style="list-style-type: none"> - Implementing pick-up points and automated delivery stations (ADSS) to solve package delivery issues.- - Consolidating parcels drop-off to minimize the kilometers travelled, and the costs of urban goods distribution.
(Arora, Srivastava, & Majumder, 2017)	<ul style="list-style-type: none"> - Implementing modular and customizable solutions including multiple IOT technologies to have a multi-point sensing in Last Mile delivery service.
(Kumar, 2015)	<ul style="list-style-type: none"> - Implementing specialist enterprise mobility software which take care of most of the issues.
	<ul style="list-style-type: none"> - Using good packing materials and including labeling for fragile products with ' handle with care'.
	<ul style="list-style-type: none"> - Tracking behaviors of the delivery personnel to build a rapport with the customer

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(Edirisinghe, 2013)	<p>Improvement Suggestions for International Ecommerce Logistics in Sri Lankan context:</p> <ul style="list-style-type: none"> - Transforming a separate statutory body for logistics - Installing information and communication tools with cutting edge functionalities - Introduction or improvement of electronic submission and processing - Improvement of customs administration - Introduction of electronic single window, Introduction or improvement of risk-based inspections and improvement in port procedures. - Reforming and modernizing the regulations & legal framework - Investing heavily in improving the human resource competencies. - Improving the logistics infrastructure
(Xu, Hong, & Li, 2011)	<ul style="list-style-type: none"> - Implementing collection and delivery point (CDP) of parcels to reduce the distribution cost and increase the transaction efficiency.
(Howson, 2017)	<ul style="list-style-type: none"> - Automate, making the supply chain data driven to cut through most of the human interaction that delays pickup and delivery.
(LogiNext, 2017)	<ul style="list-style-type: none"> - Adopting delivery management mobile applications to enable complete process visibility to manage the time of delivery, customer feedback, payment type, payment record, proof of delivery, and total service time.
Solutions for COD	
(Fallouh, 2019)	<p>For Courier or Logistics Companies</p> <ul style="list-style-type: none"> - Provide faster remittance of COD amounts to encourage this payment solution in ecommerce - Revise COD service fees - Improve percentage of delivered COD orders - COD needs to go cross-border - to gain market share. - Subsidized COD services - to encourage consumers to shop.
(World Economic Forum, 2018)	<ul style="list-style-type: none"> - Using the services of local retail outlets that offer cash- collection services to reduce the risk. - Offering the option for customers to pay cash for items purchased online through the retailers, which can reduce the burden on the delivery- service portion of the e- commerce supply chain.
(Bhalla, 2019)	<ul style="list-style-type: none"> - Charging some extra delivery cost in case of the COD option to avoid risks - Obtaining necessary customer information, such as contact details to minimize the chances of losses and frauds.

Logistics and delivery services and payment systems were identified as the e- commerce- enabling pillars need to be strengthened to realize e- commerce opportunities across the world. More work is needed to understand countries’ performance in these areas in relation to global e- commerce and actions to improve outcomes. In order to meet the delivery demands of e- commerce, sellers and delivery partners need functional and extensive infrastructure, as well as transport and logistics networks and ideal payment options that combine new technologies, multimodal transport operations and compliance with trade rules. By summarizing the findings of above studies, following theoretical framework on Cash On Deliveries (figure 02) can be suggested.

5. Conclusion

In the E-commerce environment, Delivery performance has been identified as the main factor which delivering right products without defect, packaging the product safely, meeting the promised delivery schedule to make the online customer satisfied with the services. (Ziaullah & Yi Feng, 2014).

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Although Sri Lankan E-Commerce distribution services have flourished tremendously, the lack of study on real procedures of last mile (LM) delivery has triggered bad reputations and highly dissatisfied customers around the country. Most of developing economies like Sri Lankan logistics sector has not yet been proactive in developing logistics solutions that can increase competitiveness by reducing delivery time and driving down total logistics cost. Payments have always been one of the main obstacles to shopping online in Sri Lanka. Most developing economies like Sri Lanka tend to have customers with a strong cash preference. However, if cash on delivery is so important, many companies still waver with its processes as the COD service has become notoriously problematic area when it comes to on-time and successful deliveries. To address the above identified question, this integrative review was conducted and as the outcomes, issues and challenges involved ecommerce logistics and cash on deliveries were identified. And then the solutions and strategies from Global E-Commerce Logistics & CODs were identified. Finally a theoretical framework on Cash on delivery Services which will be effective to Sri Lankan E-commerce Logistics sector were suggested. The present study has certain limitations that need to be acknowledged. The main limit is considered to be that this study is based on the qualitative- secondary data of the existing literature and a limited number of articles on Sri Lankan CODs were found. Therefore, a research gap exists in the context of Sri Lankan Cash on Deliveries was identified and as the potential implications for future research, empirical studies on Cash On Deliveries of Logistics and Courier companies can be conducted considering this work as the initial step.

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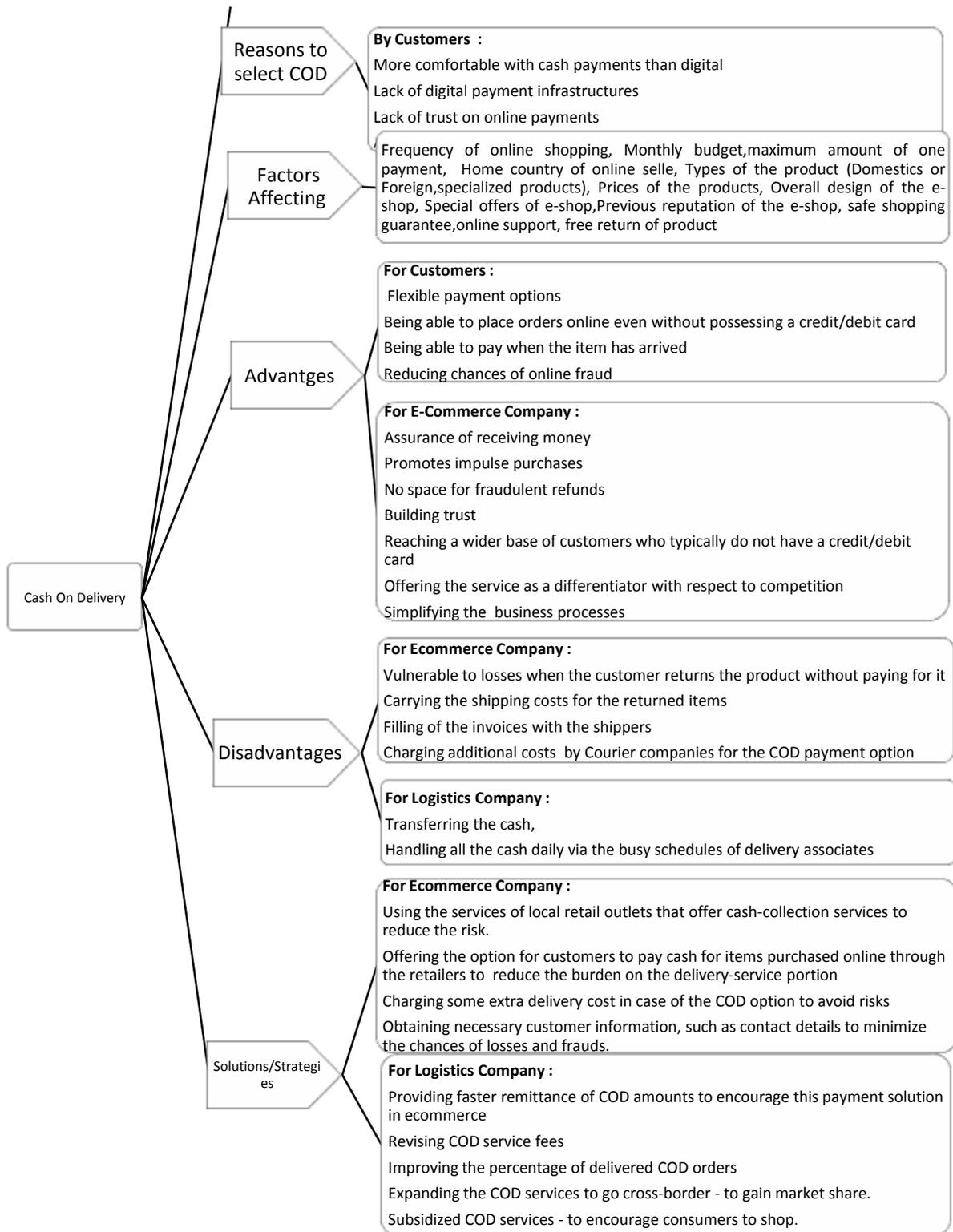


Figure 02. Conceptual Framework on Cash On Deliveries

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