

## Critical Success Factors on Delivery Preferences of E-Commerce in Malaysia

Hazlina Haron<sup>1</sup>, Siti Zakiah Abu Bakar<sup>2</sup>, Hazliza Haron<sup>3</sup> and Ho Ke Hui<sup>1</sup>

<sup>1</sup> SEGI College Subang Jaya, Persiaran Kewajipan, USJ 1, 47600 Subang Jaya, Selangor, Malaysia

<sup>2</sup> School of Technology Management & Logistics, College of Business, Universiti Utara Malaysia, 06010 Sintok, Kedah, Malaysia

<sup>3\*</sup> Department of Business Management, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, 32610 Bandar Baru Seri Iskandar, Perak, Malaysia

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### Abstract

With the increased use of Internet and mobile devices, e-commerce has only become more generalized and it shall continue growing in the future, hence there should be ways we could improve e-commerce with current technologies. One of the aspects that are deemed most important to e-commerce is the delivery sector since most e-retailers rely fully on courier service to help deliver their products to customers, whom are also known as e-shoppers. Research found 38% of e-shoppers were not satisfied with some delivery aspects in relation to their most recent online purchase and this frets e-retailers seeing as their customers' delivery experience accounts to how e-shoppers perceive the business' brand image (Okholm et al., 2013). The purpose of this research is to investigate the delivery preferences in e-commerce and accommodating them in a web-based courier service management system. This project also evaluates similar existing courier service systems and conducts a brief research on usability studies with the goal of resolving the investigated issues in the system's design and development. Overall e-commerce experience could be enhanced with the existence of a single web-based system that is not only capable of fulfilling delivery preferences in e-commerce, but also streamlines the operations involved in the delivery process internally and externally.

**Keywords:** Courier Service Delivery, Courier Delivery Preferences, Courier Delivery Critical Success Factor, E-Commerce Delivery Features, E-Commerce Shipping Preferences

### 1.0 Introduction

With the increased usage of Internet and mobile devices, e-commerce has only become more generalized and it shall continue growing in the future, hence there should be ways to improve e-commerce with current technologies. One of the aspects that are deemed most

important to e-commerce is the delivery sector since most e-retailers rely fully on courier service to help deliver their products to customers, whom are also known as e-shoppers. Upon studying the delivery sector in e-commerce, it was found that 38% of e-shoppers were not satisfied with some delivery aspects in relation to their most recent online purchase and this frets e-retailers as their customers' delivery experience accounts to how e-shoppers perceive the business' brand image (Okholm, Thelle, Möller, Basalisco, & Rølmer, 2013).

## **2.0 Related Works**

This study carried out extensive research on courier service and e-commerce in order to define courier service and its Standard Operating Procedures (SOP's), investigate the current industry situation with the final aim of finding out the delivery preferences in e-commerce. Courier service and e-commerce often go hand in hand, as both parties are dependent on each other to conduct business. The e-retailers rely on the courier service to deliver goods to the e-shoppers, and the courier companies get most of their business from e-commerce businesses. However, a number of retailers are neglecting the necessity of keeping up with their customers' high expectations on delivery, which is measured as a major deciding factor when e-shoppers contemplate whether to purchase online (Charlton, 2015).

### *A. Courier Service*

Courier services are offered by brick-and-mortar companies that provide door-to-door parcel and letter-post express delivery; courier services differ from ordinary postal service service in terms of its promptness, security, availability, delivery acknowledgement, and tracking services (Drew, 2013). According to Tochkov (2015), courier companies usually allow delivery of letter-post items that comprise of letters, postcards, and small packages that weigh less than 2kg, and parcels, which are larger letter-posts that typically weigh above 2kg and below 20kg. Courier service is typically used for business purposes, primarily to support e-commerce, or for individual needs to send gifts and cards to their friends and family (Wesley, 2016). A parcel must be accompanied with a consignment note, which is "a document regarding the carriage of goods by road, which declares the contract of carriage and includes the instructions given to the carrier and proves the contract of carriage" (Baytan, 2012). Furthermore, a consignment note typically comprises of a sender's copy, a recipient's copy, and a proof-of-delivery copy. All consignment notes usually include information such as a unique tracking number, sender and recipient details, parcel weight, delivery date and charges; meanwhile, the proof-of-delivery contains additional delivery acknowledgement that includes the recipient name and signature, along with the delivery date and time. A parcel delivery process normally involves four parties, which include the admin personnel, the dispatch driver, the consignor (also known as 'sender'), and the consignee (also known as 'recipient'). The admin personnel are in charge of inspecting consignment notes and calculating delivery charges, whilst the dispatch drivers are responsible for delivering parcels and updating shipment status for tracking purposes. In addition, a consignor is involved as the parcel sender whom would be charged for the parcel delivery, whereas a consignee is involved as the authorized recipient of said parcel.

### *B. Current Industry Situation in relation to e-commerce*

Based on a study conducted by Tochkov (Tochkov, 2015), it was found that the brisk maturation of Internet access and usage is obliquely increasing the efficiency of courier delivery quality. Besides, courier service consumers have relatively high expectations on real-

time information and elastic shipment choices due to the worldwide generalization of social media, prompt information technologies, and usage of mobile devices (European Commission, 2012). E-retailers ought to keep up to their customers' needs now that they expect relatively high delivery performance to be on par with the fully established e-commerce operations (Charlton, 2015). Tochkov (2015) studied that Internet innovations such as online shipping and web-based tracking appear to have led to enhancements in delivery efficiency by means of improving the speed and trustworthiness of courier delivery. In addition, the population density that corresponds to urbanization tends to have an effect in efficiency of delivery quality and costs, where more heavily populated regions are at an advantage as lower costs are offered for a quicker and more consistent delivery (Tochkov, 2015). Owing to the widespread Internet usage that leads to the rapid development of e-commerce globally, e-retailers rely heavily on courier services to deliver their products to customers. As explained by Okholm et al. (Okholm et al., 2013), common business-to-consumer (B2C) e-commerce transactions engage "e-retailers whom buy delivery services from delivery operators and logistics intermediaries, and e-shoppers whom buy products from e-retailers". The e-commerce market's rapid growth is accountable for the e-retailers' increasing dependability on courier companies whom are able to provide innovative and convenient business solutions that meet the e-shoppers' rising expectations (European Commission, 2012). Seemingly, e-retailers have become the largest customer base in courier companies, as they provide larger and more frequent shipment volumes as compared to casual consignors. For instance, Tong (Tong, 2016) reported, "More than 80% of parcels delivered in China come from e-commerce, and volume increased a robust 56.4% in the first quarter".

Apparently, most small to medium enterprise (SME) e-retailers have their regular 9 to 5 jobs on top of their e-commerce business seeing that their jobs provide them funding for their e-commerce business. According to Ferreira (Ferreira, 2015), having two jobs simultaneously implies that e-retailers have to utilize weekends and evenings after work to conduct their e-commerce business, which makes it extremely inconvenient for them to spare the time merely to drop by courier counters seeing that they are only open on weekdays during business hours. Hence, e-retailers often find themselves too busy to visit courier counters with the mere aim of shipping out products ordered by their customers. Besides, European Commission (2012) pointed out that there is a demand from individuals whom require easy tracking, parcel pick up, and inexpensive price for small packets, but this has often been overlooked seeing that the market is relatively insignificant compared to the e-retailers sector. Seemingly, most courier companies do indeed provide track-and-trace on their websites, but it does not quite meet the "easy tracking" standards since the process is rather tedious. Undeniably, the two aforementioned markets have extensively diverse needs in terms of delivery timeframe, IT systems and solutions, performance standards, shipment volume and frequency, and financial feasibilities (European Commission, 2012). Okholm (Okholm et al., 2013) conducted a survey for e-shoppers regarding their satisfaction with delivery in relation to e-commerce and it was revealed that thirty-eight per cent of e-shoppers were dissatisfied with one or several aspects of delivery in relation to their most recent online purchase.

A survey regarding e-shoppers and e-retailers' dissatisfaction with delivery in relation to e-commerce is resulted in Figure 1, and it is notable that e-shoppers are most dissatisfied with

the return aspects, followed by delivery prices and then delivery speeds and value-added delivery services. Undoubtedly, delivery dissatisfaction that had previously given e-shoppers frustrated experience may have significant impact on their willingness to buy from the same e-retailer again. Rao (Rao, 2013) accentuated that the courier company that delivers e-retailers' products will be the one and only most significant physical point of contact with the e-retailers' customers, whom are the e-shoppers. This alerts the e-retailers the e-shoppers' comments are subject to the delivery experience, which consecutively affects their brand name and image by a significant margin (European Commission, 2012). Charlton (2013) also found that a solid 50 per cent of e-shoppers whom took part in a survey had discarded an online purchase before merely for the reason that the delivery options offered were not up to par. However, Okholm et al. (2013) revealed that discontent is also found among e-retailers, where it revolves around delivery charges, absence of return options, and delivery speed. Okholm et al. (2013) analyzed that at least eighty per cent of e-shoppers base their decision to purchase online on availability of the following delivery options, which are easy returns, delivery without charge, and explicit services such as parcel redirecting and delivery at a specific time.

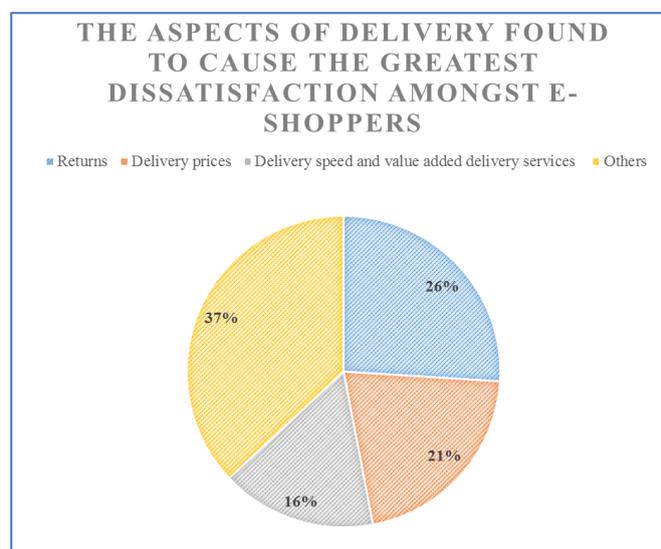


Figure 1: Aspect of delivery that causes dissatisfaction amongst e-shoppers

### C. Delivery Preferences in e-commerce

It is important to note the improvements in courier services based on the e-retailers' and e-shoppers' needs and to accommodate them in the web-based system to enhance satisfaction is deemed the most important aspect. This could potentially affect a courier company in terms of sales and customer retention. However, the delivery-related demands in the e-commerce industry are progressively varied due to the growing figure of product types that are of different values, weights, and packaging sizes (European Commission, 2012). Not only that, both e-shoppers and e-retailers also have distinct preferences when it comes to what they would consider a good delivery experience.

To begin with, Okholm et al. (2013) studied that e-shoppers find "low delivery prices, delivery to the home address, access to electronic delivery notifications and track and trace, and convenient return options" to be the most crucial delivery features. E-shoppers expect the delivery prices to be relatively low since they would rather procure from a physical shop if

they had to spend a fortune on shipping charges. European Commission (2012) specified that e-shoppers anticipate more openness regarding their parcel shipment status, especially acknowledgement in delayed, damaged or lost parcels. The brisk growth of real-time applications has also prompted e-shoppers to expect coherent real-time electronic notification regarding their delivery via e-mail or SMS, and more convenient track and trace. Contrary to popular belief, Okholm et al. (2013) highlighted that e-shoppers actually favor time-specific delivery over fast delivery. In accordance with that, a survey revealed that e-shoppers find it vital to have a say in delivery and that giving e-shoppers the power to choose the delivery timings would prompt them to purchase online more often (Charlton, 2015). Charlton (2013) specified that a large number of e-shoppers who took part in a survey voted “a fixed date or timeslot” to be the most relevant delivery option that would increase the likelihood of them purchasing online. Morganti et al. (2014) added, allowing the e-shoppers or the consignors to fix their preferred delivery date or timeslot could decrease the occurrence of deliveries that fail on the first try, which leads to increased costs incurred to redeliver the parcel. Without regard to dissimilarities in nationality or e-commerce market growth, e-shoppers still prefer their parcels to be delivered to their house address instead of work address (Okholm et al., 2013). E-shoppers also wish to have proper access to reach a person whom is able to provide them with speedy and correct information regarding delivery and return processes (European Commission, 2012). Moreover, they would like to have effortless return options that eradicate the trouble of visiting the courier service counter and going through a set of tedious procedures.

On the other hand, e-retailers are relatively concerned with six delivery aspects, which include “flexible delivery options, affordable delivery charges, flexibility on where the order can be delivered, effective communication about their delivery, fast fulfilment and a good doorstep experience” (European Commission, 2012). European Commission (2012) added, some e-retailers might need special delivery service that handles extra care for certain products, such as items that are perishable, high valued, or fragile. Okholm et al. (2013) also learned that e-retailers who deliver within the nation have a tendency to lay emphasis on faster delivery, whilst e-retailers who deliver overseas are not as concerned about it. Corresponding to the e-shoppers’ demand in flexible delivery, the e-retailers favor fast and flexible delivery that would provide their customers or the e-shoppers with a good doorstep experience in order to improve the e-shoppers’ overall experience, which helps upholding the business’ brand image over the long haul. It appears that e-retailers prefer to have better communication with the courier company regarding their consignments, which could be easily achieved by electronic notification on shipment status updates. This would enable seamless communication between the dispatch drivers and the consignors, which previously had to be achieved through an extra entity, whom happens to be the courier admin; information is often misinterpreted via manual transmission, thus creating frustrations amongst consignors and consignees due to incorrect information provided by the courier admin. By eliminating manual communication, it allows both the e-retailers and their customers to be promptly notified of up-to-the-minute and accurate updates regarding their parcel shipment. E-retailers would also appreciate it if they could have direct access to Proof of Delivery (POD) that “includes the time of delivery, full delivery address, and the name and signature of the person who accepted your shipment” (United Parcel Service, n.d.) to safeguard the consignors and to resolve any conflicts that revolve around the consignment delivery. Besides, SME e-retailers demand parcel pickup arrangement that enables them to schedule parcel pickups at

any address convenient to them instead of having them to visit a physical courier counter merely to drop off parcels.

However, both e-retailers and e-shoppers do in fact have some common preferences when it comes to convenient parcel deliveries. As studied by European Commission (2012), both e-retailers and e-shoppers would like to have more control over delivery, a clearer picture about the delivery process, easier return processes, and delivery status acknowledgement via new technologies. Both e-retailers and e-shoppers prefer to have the say over when, where, and how they want their consignments to be delivered. Okholm et al. (2013) observed that home address remains as both e-retailers and e-shoppers' top preferred delivery point, although a number of e-retailers consider work address to be a convenient delivery or pickup point. European Commission (2012) accentuated that e-retailers and e-shoppers are exceptionally concerned about whom they could turn to when they need swift responses and precise information regarding the delivery prices, delays, and returns. In addition, both e-retailers and e-shoppers look forward to accessing value added services, especially track and trace along with electronic delivery notifications by integrating technologies such as e-mail and SMS (European Commission, 2012; Okholm et al., 2013).

In brief, e-shoppers prefer courier service that offers cheap and time-specific delivery and clear shipment status via real-time electronic notification, which would improve their overall online shopping experience. In the meantime, e-retailers are always demanding fast and flexible delivery solutions that are capable of providing rapid communication and good doorstep experience to their customers in order to improve their brand image. Besides, both e-retailers and e-shoppers prefer to have more power over delivery, easier return process, quick responses and precise information, delivery to home address, and electronic delivery notifications. It is clear that both e-retailers and e-shoppers would like the courier service industry to incorporate current and new technologies in the delivery process with the aim of improving their overall e-commerce experience. European Commission (2012) implied "Increased interoperability could speed-up information exchange, ease consolidation of transport needs, parcel delivery and invoicing, facilitate co-modal transport and reduce administrative and IT implementation costs". In addition, delays, unavoidable errors and misinterpretation caused by manual data entry or information exchange could be reduced by a significant amount with the help of current technologies (Vawdrey et al., 2007).

### **3.0 Methodology**

The systems of three common local courier service providers operating in Malaysia have been assessed in this section, which include City-Link Express, GDex (GD Express) and Ta-Q-Bin. The overview, user interface design, and usability of the system from each courier service provider's system have been evaluated with the final aim of picking up possible requirements to be included in the web-based courier service management system. Upon assessing each courier service provider's system, the brief company background and system features of each courier service provider were summarized in Table 1 below. Each system was also evaluated based on some of the 10 Usability Heuristics for User Interface Design as recommended by Nielsen (1995) along with a couple of other measures; the developed system shall be evaluated using the same set of criteria as well.

Table 1: Usability Evaluation

Features	Visibility	Consistency	Error Prevention	Recognition	Aesthetic and minimalist design	Error diagnose & recovery	Intuitive & user-friendly
GDex (GD Express)	√	X	√	√	√	X	X
City-Link Express	X	√	X	√	X	X	X
Ta-Q-Bin	X	X	N/A	√	√	N/A	√

#### 4.0 Results and Discussion

Amongst the three systems that were reviewed, only two of them allow users to create an account online. However, all three providers only accept corporate or business owners as customers given that the business nature allows them to arrange shipments in a rather large volume on a daily basis. Contrary to the nature of courier service providers, the web-based courier service management system shall allow individual customers to create an account and arrange shipments online without a specified minimum shipment volume and without being required to enter a business registration number.

Whilst one of the three systems that were reviewed provides flexible delivery options, the options are imprecise, as it only allows customers to choose from a set of specified delivery time-zones. On the other hand, the web-based courier service management system shall summaries the delivery options into just one, letting the consignors and consignee select their preferred date and time to get their parcel picked up or delivered. With a more precise preferred delivery option, customers would not waste their time merely to stay in for a few hours just waiting for the courier dispatch driver.

Besides, the web-based courier service management system should avoid including too much irrelevant information in one page, or throughout the system as a whole. Moreover, attempt in fitting a lot of information in one page not only overwhelms the users, it also makes the content appear cramped and untidy. Moreover, texts and paragraphs should be separated with appropriate amount of whitespace and line spacing to give the users a visual pause in between information. Sans serif fonts with moderately big font sizes, and high contrast between the colours of text and background should be used in the web-based courier service management system to increase readability.

Recognition rather than recall is also deemed an important factor to increase the system's usability. The web-based courier service management system should make its features as visible as possible, without requiring users to recall where a certain feature is located in the system before they could use it. Consignors would not have to recall a shipment merely by the tracking number, since shipments that they have arranged will be listed on their account,

they could recognize a parcel from the consignee details and parcel details from the arranged parcel list instead. The system should also include more visual or textual cues and hints that assist users in completing tasks more easily.

Moreover, it is important to avoid technical terms such as error, invalid, bad, etc. when displaying error messages as not all users are capable of understanding the source of the errors, let alone recovering from the errors quickly. This indicates that the system should provide helpful guidelines and indications to help users resolve any issues that may occur. Besides, the system shall use terms and representations that match objects and actions in real world in order to enable users to conduct tasks on the system just as they would in real life. The steps to conduct a task should also be close to the same or similar to real life procedures so that users will be more comfortable and familiar with it. Lastly, the entire system should remain consistent in terms of layout, fonts, colours, navigation menu, terms, icons, etc.

#### *Critical Success Factors for an e-commerce delivery preference*

Flexible Delivery Option	A time-specific delivery instead of the normal delivery that follows the shipping schedules. User is given options of stating their preferred specific delivery time
Parcel Pickup Details	A time-specific pickup by allowing consignors to pick their preferred parcel pickup date and time to suit their busy schedules.
Update Account	Consignors are also offered flexible pickup point options, by changing the parcel pickup address to any locations convenient to them, such as their workplace, so that they are no longer required to go to the courier service counters
Clear Shipment Status	The system that offers the track and trace feature to let users to track their parcels; the users are able to find out where their parcels are, the timestamp of shipment status, and what is going to happen to their parcel next. The illustrated status indicator also allows users to get a clearer picture of the delivery process.
Real-Time Electronic Notification	The consignor and consignee both will receive a real-time electronic notification via e-mail when the consignor has arranged a parcel shipment, so that the consignee knows when to expect the delivery and how to change the delivery date and time for their parcel. It also provides a means of effective communication, since the consignor does not have to inform the consignee regarding the parcel delivery personally.
Easy Return Process	The consignee can arrange a parcel return by just entering their parcel tracking number, verification code, and preferred pickup date and time.
Quick Responses	Allows consignors and consignees to get quick responses from the courier service admins by submitting an enquiry that could be an enquiry, a comment, or a feedback.
Precise Information	Service details and price estimation are provided. It allows its' users to view details of all available services. It also offers the users a shipment price estimation feature that calculates the precise

	shipment charges for a parcel based on the origin, destination, service, and parcel weight
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## 5.0 Conclusion and Future Works

The research revealed that delivery dissatisfactions that had previously given e-shoppers frustrated experience impose a significant impact on their willingness to buy from the same e-retailer again, and they also affect e-retailers' brand name and image (European Commission, 2012). Hence, both e-retailers and e-shoppers voiced that they would like to have more power over delivery, easier return process, quick responses and precise information, delivery to home address, and electronic delivery notifications. By adapting e-shoppers and e-retailers' delivery preferences in the system, delivery satisfaction will be significantly increased, hence enhancing the overall transparency, efficiency, and customer satisfaction in both e-commerce and courier service sectors.

Besides the aforementioned delivery preferences in e-commerce, another aspect that influences a user's decision to use a web application, regardless of it being in the courier service or e-commerce sector, is the user experience provided by the web application. With the statistics of mobile web usage surpassing desktop web usage, a website should be responsive in such a way that its layouts and contents scale accordingly to the device's screen size, orientation, and limitations. A web application's responsiveness is likely to make or break users' decisions in using or purchasing from the business, seeing as users are found to be more tolerant of websites that are responsive and look aesthetically pleasing, whereas a desktop-optimized web application is prone to cause frustrations in mobile users owing to the poor readability per se.

## Corresponding Author

Hazliza Haron, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, 32610 Bandar Baru Seri Iskandar, Perak, MALAYSIA, Email: hliza457@perak.uitm.edu.my

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