THE IMPACT OF DISTRIBUTION DESIGN NETWORK TO THE REVERSAL LOGISTICS PROCESS OF ONLINE PRODUCTS

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Received: 25.03.2020 Revised: 23.04.2020 Accepted: 01.06.2020

Abstract
The volume of online shopping transactions had increased drastically due to a change in consumer purchase behavior, as resulted in the rapid development in the purchase technology. This development has attracted considerable attention from the researcher to investigate this area. In comparison to online shopping, the buyers are solely depending on the images and details of the products that appear on the website of online shopping, which may differ from the actual products and quality received by the buyer that contribute to high return rates. Taking this matter into consideration, this study is motivated to investigate the impact of the distribution design network to the returnable process of online products. This research used a quantitative method by using a questionnaire to get the perspective from the customers towards the impact of distribution design network to the returnable process of online products. The research conducted at Bandar Seri Alam, Pasir Gudang which focused on the online customers among teachers. Teachers can be considered competent enough to be put as respondents since they have a stable income. The questionnaire was distributed to 217 respondents, the data collected analyzed by SPSS version 23 to obtain more detailed information. The findings revealed that there is a relationship between the reverse logistics process to repurchase activities. This study contributed to making several contributions to improve and to give ideas towards e-retailers on their distribution design networks and to provide knowledge among online shoppers.

Index Terms– Supply Chain Management, Logistics, Reverse Logistics, Distribution Design network, Online products.

INTRODUCTION
Online shopping is now the norm, and since it has many advantages, consumers are adopting it. From the consumer’s point of view, online shopping provides low and transparent prices, a comprehensive range of goods and services, and a much more convenient shopping alternative that has eliminated such traditional shopping, crowd-squeezing inconveniences, stuck in a long queue at a cashier counter, fighting for parking spaces in a busy mall.

[2] classifies online shopping as the process through which web merchants buy goods and services. It is also commonly recognized as internet shopping, electronic shopping, shopping online or shopping online [3] further defined internet shopping as examining, searching, browsing or looking at a product to gain more information on the internet with the possible intention of purchasing. [4] viewed online shopping as an exchange of time, effort and money to receive products or services from a certain point of view.

In recent research by [5] suggested that the ongoing upswing in the trend of e-commerce and mobile business will continue to have a significant impact on the retailers, distributors, and third-party logistics providers (3PL) on how their approach their distribution network processes.

JLL also notes in its report that the numbers of retailers that are using a multi-channel approach to meet buyer expectations and compete for market share through the online platform have been steadily increased for the last five years as increased online sales.

LOGISTICS ISSUES IN THE ONLINE BUSINESS DELIVERY
One of the problems in the online retail models is the process of returning the products due to defects, did not meet specifications, etc. The product returns process is disproportionally common with the other common retail model.

While online product sales are growing exponentially (at about multiple times the rate of brick and mortar shops) almost one-third of the online orders are being returned to the seller. Contrast with the 9 percent of the product that is returned to physical stores, that immense error comes at a major expense. With free delivering, and frequently free returns, the cost of processing everything can reach up to sixty-five percent of the total cost of the products sold (COGS).

In recent research, 20 percent of online customers in Klang valley was not happy with the returning process, mainly because of a lack of support and difficulties in organizing the return process. The research also revealed a lack of online chatting support on the respondent’s feedback, which is sometimes even hard for them to find a telephone number to contact. Shoppers have to wait for at least 30 minutes to an hour on email support or reply if there is any issue [Nanyang [6].

[7] expressed that the inefficient return process is the biggest disappointment among the online customer in Asia. Only 44% were happy with the clarity of retailers’ return policies, compared with 62% of Europeans and 67% of Americans. The research by [7] has consistently reported the least satisfaction of Asian customer towards the return related statements, for example, "Capacity to process an arrival/trade on the web", and "Ability to process a return/exchange online", and "Ease of shipping product back to retailer for return/exchange" although not exactly 50% of the respondents had made a return in the last year. It’s maybe a result of these stumbling blocks that four out of 10 shoppers would prefer to return an item to a physical store over delivery one back to an online retailer.
REVERSE LOGISTICS.
There are several definitions are commonly used to define reverse logistics among industry practitioners. Among the well-accepted definition has defined reverse logistics as a reverse activity that involving the backward process of planning, implementing, and controlling of cost and flow of raw materials, in-process inventory, finished goods or related information from the market or consumer to a point of recovery or point of proper disposal.” [1].

Reverse Logistics gets its name because it is the opposite process of forwarding logistics [9] stated in their research titled “Reverse Logistics and its Pros & Cons” as suggested the element of remanufacturing and refurbishing activities to be included in the definition of reverse logistics.

In the usual case, logistics deal with bringing products towards the customer which is known as forwarding logistics. However, in the reverse logistics, goods move from customers to distributors or the manufacturers. In other words, reverse logistics takes place when the customer returned the goods if there are any damages or if it is not what customer desires [1] & [11], suggests that reverse logistics in its simplest form is running its process backward to gain as much value as possible. However, reverse logistics can also start from distributors and retailers as well where they can reuse and recollected the products again. Apple is a great example of a reverse logistics system. It can be seen when Apple manufactures iPhones and other products which are then sold in various stores across the world. Consumers who purchase iPhones and enjoy the product will eventually want to upgrade their products. So, when consumers return their old product to a store to buy the latest model, Apple offers a discount to their consumers. Apple then collects the old models and brings the products back to their factories. These processes will not only help Apple in being more environmentally friendly, but it also helps in saving money on production costs. This is because it allows Apple to use parts from previous models in their newer products.

BARRIERS IN MANAGING RETURN PROCESS ACTIVITY
A. Lack of clear policy on returns.
In normal practice, online product returns are often not held by the sales departments. This results in unclear warranty conditions, varying service levels, and inconsistent return product policies. This is part of the company’s agenda is to reduce the number of returns driven by trade agreements.

B. Little recognition as a factor in creating competitive advantage of the return process
The researcher suggested that the product return process is perceived by many organizations are not as important as the delivery process which requires more attention as part of the holistic improvement in the logistics operation [12].

C. Limited planning and forecasting
There are hardly any precise return forecasts available. For both strategic and operational planning, which is a direct barrier. Currently, the return product process has only been implemented by the first movers [12].

DISTRIBUTION NETWORK DESIGN
The purpose of the distribution network design (DND) is to shape the distribution network structure to determine the number of tiers and, for each tier, the type, size, number and location of facilities where the product is temporarily stored to the end customers [1], [14-15] & [23]. These choices are driven by various contextual factors (e.g. product and demand features), have a strong impact on the performance of the supply chain in terms of both logistics and customer service costs. [13-14], stated that an effective DND could significantly reduce the cost of inventory, transportation, and facilities while increasing (or at least maintaining) the level of service. [17]. describe DND as a key driver of a company's overall profitability. The globalization of economic activities and rapid
developments in information technology leads to shorter product lifecycles, smaller lot sizes, and very dynamic customer behavior, making it more important to have a robust and well-designed distribution network.

DISTRIBUTION PROCESS MANAGEMENT
The distribution process is an important element of operations as, without a role that tracks and improves the relationship between manufacturers and customers, a company cannot ensure the best possible service. If bottlenecks happen in distribution, deliveries fall short, customers, retailers and suppliers get angry, and trust is lost. For product distribution to be truly successful, a continuous feedback loop needs to be implemented to ensure everyone is happy with the process and that any improvements that can be made, are made.

Managing the distribution process begins well before the organization chooses the selling options and, in most cases, it should start before even making the product. To properly manage the distribution process, it's important to know why organizations using those methods to bring the sales partners into the loop of marketing strategies and set benchmarks to measure the effectiveness of the efforts.

In terms of online products, customers buying items online which both merchants and customers do not get to try the product before they buy so they trust that the item will arrive just like in the pictures and descriptions. This means that the distribution channel needs to be efficient at providing responses and comments across the whole channel.

CONCEPTUAL FRAMEWORK
A conceptual framework is important in describing the theory that has been explaining why the research problem under this research exists. Below shows the research conceptual framework developed to guide the research.

![Figure 2. Conceptual framework](image)

RESULT AND DISCUSSION
This finding from the survey is discussed using descriptive and inferential analysis as the following sub-heading:

A. Descriptive Analysis
1. Online Business Experiences
A total of 217 respondents participated in this study. Most of the respondents indicated that they were female (73.7%), while the remaining (26.3%) were male respondents.

According to the data collected, a group with the highest percentage of shopping last year is 39.6% which is 3-5 times followed by 27.6% for 5-10 times while 21.7% is for more than 10 times and the rest is 11.1% for only once. This indicates that most of the respondents are active shoppers.

62.7% of the respondents stated that they encountered problems while conducting online shopping while the balance of 37.3% of respondents has no problems at all. This finding indicates there are vast problems in online shopping platforms.

62.7% of respondents stated that they encountered problems in terms of delay in delivery for 24.0% followed by product damage 18.9%, 13.4% for cheap quality of products and finally 6.9% of non-delivery.

In this study, the majority of the respondents revealed that they had experience in returning online products which are 52.5%. It is followed by respondents with no experience which scoring 47.5% respectively.

There are only four categories of problems identified in this study. From the finding, 17.1% of the total respondents revealed that they experienced defectiveness of products while 15.2% of respondents stated that the seller sent them the wrong products followed by 14.7% of respondents who experienced the damage of products during shipping. The least problem with the scoring of 11.5% which is products does not match the description and the rest of 40.6% of respondents revealed that they had no problems.

In terms of problems faced during the returnable process, most of the respondents stated that they had problems with sellers sending them wrong products with a percentage of 15.7%. It is followed by the respondent of 15.2% with the problems of defectiveness of products while those with the scoring of 13.8% said to have problems on the damage of products during shipping and lastly, 11.5% of respondents had problems with products does not match the description.

The remaining 43.8% of respondents revealed that they have not experienced any problems before. This finding indicates a significant contribution to this study since these groups of problems can be suggested as the major issues involved in online shopping platforms.

Ranking among online sites (any 5) among shoppers is divided into six groups. 86.2% of shoppers chose Shopee.my as their favorite sites, followed by 82.0% picked Lazada.my and 53.9%, 40.6% and 37.8 of respondents have chosen Zalora.com, 11street.com, and Aliexpress.com. While the remaining percentage of shoppers with the scoring of 1.4%, 0.9%, and 0.5% picked Cjwowshop, Go shop and Taobao as their favorite online sites.
2. Distribution design networks impact to reverse logistics

The respondent needs to identify the importance of these sources based on the developed five-point scales including “Strongly Agree”, “Agree”, “Neutral”, “Disagree”, “Strongly Disagree” as shown in Table 2.

First is about 54.8% (17.5%, strongly agree; 37.3%, agree) of the respondents are aware of the return policies when they shop online while 10.6% (10.1%, disagree; 0.5%, strongly disagree) of the respondents disagree that they are not aware of the return policies when shop online. The remaining 34.6% of the respondents opted to be neutral in this question. By answering this question, it is evident that many respondents are aware of the return policies.

Next, about 44.3 (9.7%, strongly agree; 34.6, agree) of the respondents are agree that the return policies did guide them on the return process while the remaining 41.5% selected neutral and 14.3% (12%, disagree; 2.3%, strongly disagree) of the respondents disagree when asked did the return policies guide them on return process.

Moreover, around 38.7% (6%, strongly agree; 32.7%, agree) of respondents agree that the seller gives fast response time on return complaints. Most of the respondents around 41.9% opted to be neutral in this question and about 19.4% (18.9%, disagree; 0.5%, strongly disagree) of the respondents disagree with the question.
Table 2. Online Business Experiences

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you aware about return policies when you shop online?</td>
<td>38 (17.5%)</td>
<td>81 (37.3%)</td>
<td>75 (34.6%)</td>
<td>22 (10.1%)</td>
<td>1 (0.5%)</td>
<td>2.387</td>
<td>0.90647</td>
</tr>
<tr>
<td>Did return policies guide you on return process?</td>
<td>21 (9.7%)</td>
<td>75 (34.6%)</td>
<td>90 (41.5%)</td>
<td>26 (12%)</td>
<td>5 (2.3%)</td>
<td>2.627</td>
<td>0.8995</td>
</tr>
<tr>
<td>Seller fast response time on return complaints</td>
<td>13 (6%)</td>
<td>71 (32.7%)</td>
<td>91 (41.9%)</td>
<td>41 (18.9%)</td>
<td>1 (0.5%)</td>
<td>2.751</td>
<td>0.84591</td>
</tr>
<tr>
<td>Seller properly guide buyer on the return processes.</td>
<td>12 (5.5%)</td>
<td>68 (31.3%)</td>
<td>97 (44.7%)</td>
<td>37 (17.1%)</td>
<td>3 (1.4%)</td>
<td>2.774</td>
<td>0.84419</td>
</tr>
<tr>
<td>Seller able to offer solutions on the return products.</td>
<td>18 (8.3%)</td>
<td>59 (27.2%)</td>
<td>105 (48.4%)</td>
<td>31 (14.3%)</td>
<td>4 (1.8%)</td>
<td>2.742</td>
<td>0.87015</td>
</tr>
<tr>
<td>Process to return is clear &amp; transparent.</td>
<td>17 (7.8%)</td>
<td>74 (34.1%)</td>
<td>103 (47.5%)</td>
<td>19 (8.8%)</td>
<td>4 (1.8%)</td>
<td>2.627</td>
<td>0.8243</td>
</tr>
<tr>
<td>No cost involved.</td>
<td>26 (12%)</td>
<td>68 (31.3%)</td>
<td>87 (40.1%)</td>
<td>31 (14.3%)</td>
<td>5 (2.3%)</td>
<td>2.636</td>
<td>0.94829</td>
</tr>
<tr>
<td>Convenience of product returning procedure.</td>
<td>12 (5.5%)</td>
<td>71 (32.7%)</td>
<td>98 (45.2%)</td>
<td>31 (14.3%)</td>
<td>5 (2.3%)</td>
<td>2.751</td>
<td>0.85137</td>
</tr>
<tr>
<td>Lead time to receive the replacement products is within policy’s agreed time.</td>
<td>12 (5.5%)</td>
<td>62 (28.6%)</td>
<td>104 (47.9%)</td>
<td>31 (14.3%)</td>
<td>8 (3.7%)</td>
<td>2.82</td>
<td>0.87663</td>
</tr>
<tr>
<td>Quality of returned products meets the buyer’s requirements.</td>
<td>10 (4.6%)</td>
<td>65 (30%)</td>
<td>110 (50.7%)</td>
<td>28 (12.9%)</td>
<td>4 (1.8%)</td>
<td>2.774</td>
<td>0.79912</td>
</tr>
<tr>
<td>Gift or compensation involved while doing return processes.</td>
<td>10 (4.6%)</td>
<td>55 (25.3%)</td>
<td>104 (47.9%)</td>
<td>37 (17.1%)</td>
<td>11 (5.1%)</td>
<td>2.926</td>
<td>0.89964</td>
</tr>
</tbody>
</table>

3. Relationship between the reverse logistics process to the repurchase activities.

In this section, the respondents were asked to indicate the return processes of online products. The findings indicate that 39.6% (10.1% strongly aware, 29.5% aware) of the respondents are aware that the seller will arrange a collection of the returnable product from the buyer. It was evident during the answering of this question, where many of the respondents have verbally expressed their awareness towards the process which translates to this result. However, 18.9% of respondents (14.3% unaware, 4.6% strongly unaware) still do not know this aspect. The remaining 40.6% of the respondent opted to be neutral in this question.

Around 39.7% (8.8% strongly aware, 30.9% aware) apprised of the collection center is nearby or easy to find for the return processes. This is an adverse finding from what the researcher expected which requires further examination because of the different distribution design networks used in different places. Only 19.8% (17.5% unaware and 2.3% strongly unaware) of the respondents are oblivious of the collection center is nearby or easy to find for the return processes. While the remaining respondent is around 40.6% remain neutral.

Next, the finding revealed that 39.1% (11.5% strongly aware, 27.6% aware) of the respondent’s perceived returning process is easy to understand. Around 17.5% (13.8% unaware, 3.7% strongly unaware) of the respondents are unknowing of the returning process is easy to understand. While the remaining 43.3% neutral selected by the respondent.

Besides that, the respondent’s perceived confidence towards every process and step of replacement will be informed through a mobile app. This perception is translated in the survey result of which 41.9% (10.6% strongly aware and 31.3% aware) of the respondent with every process and step of replacement will be informed through the mobile app. That means to keeps all information on track. 41.5% of the respondents perceived neutral and only 16.6% (13.8% unaware, 28% strongly unaware) of the respondents did not aware of every process and steps of replacement will be informed through the mobile app. Next, about 41.9% (12.4%, strongly aware, 29.5%, aware) of the respondents about Poslaju Malaysia acts as a hub for buyers to send returned products, while the remaining 41.9% selected neutral. Finally, 16.1% (12.4%, unaware; 3.7%, strongly unaware) of the respondents about Poslaju Malaysia acts as a hub for buyers to send returned products.

Equally Important, based on the there is a period for the buyer to return purchased products. A major part of the respondent aware which contributed the result around 46.6% (9.7% strongly aware, 36.9% aware). Meanwhile, 12.4% (10.6% unaware, 1.8% strongly unaware) unaware about there is a period for the buyer to return purchased products. The remaining number of the respondent is 41.0% opted to be neutral.

Lastly, a large number of the respondent which is 35.9% (7.8% strongly aware, 28.1% aware) conscious of multiple distribution channels, for buyers to return purchased products. Meanwhile, 17.9% (16.1% unaware, 1.8% strongly unaware) is unenlightened on multiple distribution channels, for buyers to return purchased products. Remaining of the respondent 46.1% settled on neutral.
Table 3. Online Business Experiences

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly aware</th>
<th>Aware</th>
<th>Neutral</th>
<th>Unaware</th>
<th>Strongly Unaware</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seller will arrange a collection of the returnable product from the buyer.</td>
<td>22 (10.1%)</td>
<td>64</td>
<td>88</td>
<td>31</td>
<td>10</td>
<td>2.9124</td>
<td>2.08981</td>
</tr>
<tr>
<td>The collection center is nearby or easy to find for the return processes.</td>
<td>19 (8.8%)</td>
<td>67</td>
<td>88</td>
<td>38</td>
<td>5</td>
<td>2.7373</td>
<td>0.92803</td>
</tr>
<tr>
<td>The returning process is easy to understand.</td>
<td>25 (11.5%)</td>
<td>60</td>
<td>94</td>
<td>30</td>
<td>8</td>
<td>2.7051</td>
<td>0.96974</td>
</tr>
<tr>
<td>Every processes and steps of replacement will be informed through your mobile app</td>
<td>23 (10.6%)</td>
<td>68</td>
<td>90</td>
<td>30</td>
<td>6</td>
<td>2.6682</td>
<td>0.93816</td>
</tr>
<tr>
<td>Poslaju Malaysia acts as a hub for buyers to send returned products.</td>
<td>27 (12.4%)</td>
<td>64</td>
<td>91</td>
<td>27</td>
<td>8</td>
<td>2.6544</td>
<td>0.97439</td>
</tr>
<tr>
<td>There is a period for buyer to return purchased products.</td>
<td>21 (9.7%)</td>
<td>80</td>
<td>89</td>
<td>23</td>
<td>4</td>
<td>2.5806</td>
<td>0.87358</td>
</tr>
<tr>
<td>Multiple distribution channels, for buyers to return purchased products.</td>
<td>17 (7.8%)</td>
<td>61</td>
<td>100</td>
<td>35</td>
<td>4</td>
<td>2.7604</td>
<td>0.88071</td>
</tr>
</tbody>
</table>

Inferential Analysis

The information obtained from the descriptive analysis has provided us with general information regarding the current status of the research subject. However, this information is not enough to report various issues on the impact of distribution design networks to the reverse logistics of online products.

For this reason, additional statistical analysis reporting is needed to address the relationship between the reverse logistics process to the repurchase activities. A standard 3 steps in the multiple regression process was used to check the assumptions, evaluating the model, and evaluating each of the independent variables [19].

Step 1: Checking the assumptions

The first step in the process is to check the standard assumption in multiple regression process discuss in the following:

a) Sample size

The determination of the sample requirement is adopted from the formula developed [20].

Sample size = N > 50 + 8m

(m = number of independent variables).

Based on the formula, the sample size of 217 respondents who participated in this study was sufficient.

Outliers were checked using Mahalanobis distance tests using multiple regression programs. The maximum score from the test was 27.782.

Based on 2 independent variables developed in the conceptual framework, the critical value for evaluating the Mahalanobis distance values determined at 9.210 as shown in Table 4. This approached is adopted from [20] & [19].

b) Normal P-P plot of regression standardized residual

The result of P-Plot in figure 3 shows a normal plot, indicates appropriate data were used in the multiple regression analysis as shown a straight line (from bottom left to top right) relationship to predicted dependent variable scores.

Table 4. Outlier Residual Statistics

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Value</td>
<td>11.2907</td>
<td>49.2897</td>
<td>29.8157</td>
<td>6.88908</td>
<td>217</td>
</tr>
<tr>
<td>Std. Predicted Value</td>
<td>-2.689</td>
<td>2.827</td>
<td>0</td>
<td>1</td>
<td>217</td>
</tr>
<tr>
<td>Standard Error of Predicted Value</td>
<td>0.044</td>
<td>0.182</td>
<td>0.072</td>
<td>0.026</td>
<td>217</td>
</tr>
<tr>
<td>Adjusted Predicted Value</td>
<td>11.3063</td>
<td>49.3125</td>
<td>29.816</td>
<td>6.8871</td>
<td>217</td>
</tr>
<tr>
<td>Residual</td>
<td>-1.66101</td>
<td>1.67755</td>
<td>0</td>
<td>0.6505</td>
<td>217</td>
</tr>
<tr>
<td>Std. Residual</td>
<td>-2.542</td>
<td>2.567</td>
<td>0</td>
<td>0.995</td>
<td>217</td>
</tr>
<tr>
<td>Stud. Residual</td>
<td>-2.548</td>
<td>2.579</td>
<td>0</td>
<td>1.002</td>
<td>217</td>
</tr>
<tr>
<td>Deleted Residual</td>
<td>-1.66904</td>
<td>1.71553</td>
<td>-0.0003</td>
<td>0.65862</td>
<td>217</td>
</tr>
<tr>
<td>Stud. Deleted Residual</td>
<td>-2.581</td>
<td>2.614</td>
<td>0</td>
<td>1.007</td>
<td>217</td>
</tr>
<tr>
<td>Mahal. Distance</td>
<td>0</td>
<td>15.771</td>
<td>1.991</td>
<td>2.495</td>
<td>217</td>
</tr>
<tr>
<td>Cook's Distance</td>
<td>0</td>
<td>0.091</td>
<td>0.004</td>
<td>0.008</td>
<td>217</td>
</tr>
<tr>
<td>Centered Leverage Value</td>
<td>0</td>
<td>0.073</td>
<td>0.009</td>
<td>0.012</td>
<td>217</td>
</tr>
</tbody>
</table>

| a. Dependent Variable: Repurchase |
THE IMPACT OF DISTRIBUTION DESIGN NETWORK TO THE REVERSAL LOGISTICS PROCESS OF ONLINE PRODUCTS

Figure 3. Normal P-P Plot of Regression Standardised Residual

Figure 4. Histogram

c) Histogram
The result of the Histogram (Figure 4) shows a normal distribution that confirms the suitability of the data used in the multiple regression analysis to predict the dependent scores.

d) Collinearity diagnostics
Table 5 shows the results of tolerance and VIF. Generally, cut-off points for determining the presence of multicollinearity are a tolerance value of less than .10 and VIF value of above 10. The result of Collinearity diagnostics shows the tolerance value for each independent variable was more than .10, and VIF values were below 10. This indicates the data is free from the presence of multicollinearity issues that could contribute to high standard errors.

Table 5. Coefficient

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td>t</td>
<td>Sig.</td>
</tr>
<tr>
<td>(Constant)</td>
<td>.432</td>
<td>.210</td>
<td></td>
<td>2.139</td>
<td>.032</td>
</tr>
<tr>
<td>Design</td>
<td>-.001</td>
<td>.010</td>
<td>-.001</td>
<td>-.094</td>
<td>.925</td>
</tr>
<tr>
<td>Process</td>
<td>1.086</td>
<td>.081</td>
<td>.006</td>
<td>10.280</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 6. Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.994</td>
<td>0.991</td>
<td>.991</td>
<td>.053</td>
</tr>
</tbody>
</table>

Table 7. ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>10251.228</td>
<td>2</td>
<td>5125.631</td>
<td>12000.858</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>9440.406</td>
<td>214</td>
<td>437</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>19691.637</td>
<td>216</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Step 2: Evaluating the model
As shown in Table 6 (Model Summary), the value of the adjusted R square was .991. When expressed as a percentage multiplied by 100, this means that the model explained 99.1% of the variance in frequency of repurchase.

Furthermore, to assess the statistical significance of the result (see Table 7) for testing that multiple R in the population was equal to 0, the model in this study reached statistical significance \(F(2,214) = 12000.858, p <0.000\).

Step 3: Evaluating each of the independent variables
Results in Table 5 show only Process variables \((p< .05)\) made a significant contribution to the prediction of the dependent variable (Repurchase). Furthermore, the Process variable was the largest beta coefficient \((\text{Beta} = .0996)\) which indicated as the best factor that influenced the repurchase.

CONCLUSION
From the survey, the respondent revealed that they had experience in returning online products which are 52.5%. Reverse logistics occurs when there are complications or problems as per results from the data collected from the survey whereby 17.1% of the total respondents revealed that they experienced defectiveness of products while 15.2% of respondents stated that seller sent them the wrong products followed by 14.7% of respondents who experienced damaged of products during shipping. The least problem with the scoring of 11.5% which is products does not match the description. This evidence is strong enough to support Lucy [21], statements on when customers purchase their items in a real store, they can feel it and touch it. So, it is easy for them to see the goods that they're buying. However, it is not easy for customers to evaluate their goods if they purchase it through a screen monitor. Therefore, the customers have been given an option to return the goods if it does not meet their desires. Therefore, return items are not only common in online retail, but they are also to be expected as standard.

Based on the current design, the suitable design for e-retailers is distributor storage with carrier delivery whereby under this option, inventories are not held by factory manufacturers but are held in intermediate warehouses by distributors/retailers, and package carriers are used to transport products from the intermediate location to the final customer. It is suitable for medium-to-fast moving objects. It also makes sense if customers...
want delivery faster than manufacturer storage is offered, but they don’t need it right away shopper will interface with the seller only where the return process will be discussing. This design will ease the process of managing reverse logistics between e-retailers and customers.

The researcher found that the respondents are mostly aware of which the findings indicate that 39.6% of the respondents aware that the seller will arrange a collection of the returnable product from the buyer. It was evident during the answering of this question, where many of the respondents have verbally expressed their awareness towards the process which translates to this result. This proved that statements made by [10], that customer service is the golden key to any successful business. If the customer service is great, then it will increase business productivity is accurate. The analyzed data also revealed 36.8% of the respondents agree with the seller properly guide the buyer on the return processes this result is in line with statements made by [10] there is evidence that says the implementation of reverse logistics shows business response times a lot faster. Therefore, creating a better experience and allowing for better customer service.

From the data analysis, the researcher managed to prove that there is a significant relationship between reverse logistics process to the repurchase activities in which the value of adjusted R square was .991, this means that the model explained 99.1% of the variance in frequency of repurchase. This analysis can be used to support the statement made by [22] on e-retailer who are competent in giving transonv reverse logistics services will result in practically 82% re-buy intention in web-based shopping. In this manner, it is paramount to guarantee the fulfillment of the delivery service can be done with the goal that any pointless or extra work required because of the improper transaction can be maintained a strategic distance from which toward the end consumer satisfactory can meet.

ACKNOWLEDGMENT
A special thanks to Muhammad Naim Adzlan and Abd Rahman Ahmad for their support and valuable assistance to complete this research.

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