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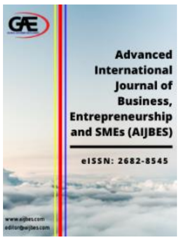

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UNRAVELLING CHALLENGES IN ENSURING PARCEL SAFETY IN LAST MILE DELIVERY FOR THE POSTAL AND COURIER INDUSTRY

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Abstract:

There are several difficulties in the logistics chain's last-mile delivery phase, especially when it comes to guaranteeing package safety. The present study aims to provide a thorough analysis of the complex problems that affect package security in the final leg of delivery to different kinds of customers, recipients, and other users. Using a quantitative methodologies research methodology, the study seeks to identify the challenges associated with meeting the distinct needs of various demographic groups. The objective of this study is to investigate challenges in ensuring parcel safety during last-mile delivery. The research design in this study is quantitative. A quantitative research design involves the collection and analysis of numerical data to understand and quantify consumer experiences with last-mile parcel delivery. A total sample about 245 questionnaires was collected and the analysis using SPSS software. The results of the investigation will provide insight into the variables affecting package security and the general calibre of last-mile delivery services. Through the identification and comprehension of these challenges, we aim to provide significant insights into the postal and courier industry. This will facilitate the creation of focused strategies and solutions that aim to improve parcel safety in a variety of demographic contexts, ultimately maximizing the effectiveness and dependability of last-mile delivery services.

Keywords:

Last-Mile Delivery, Parcel Safety, Challenges, Postal And Courier Industry, Customer Satisfaction

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Introduction

In today's challenging service-oriented business world, every business must deliver the highest quality to strive and please its customers. To make a business organization successful in the long run, customers continuously play a vital role. Postal and courier are also expected to provide valuable service quality to their customers. In providing high-quality services to customers, this industry also faces challenges. It is important to consider that consumer perspective and experience are closely linked. Organizations that offer a higher level of service quality will receive higher consumer satisfaction in terms of better experience. An outstanding product or service alone may not be enough to sway consumer behavior nearly as much would be the case if they had a positive customer experience. Thus building a customer experience is one of market winning strategy (Trini & Salim, 2018). Considering the pressure on companies due to the highly competitive market, there is a requirement for them to possess the capability to send their goods in a timely manner as well as safely received by the consumer. In a recent study by Mordor Intelligence the postal and courier industry market size in Malaysia is expected to grow from USD1.32 billion (RM6.29 billion) in 2023 to USD2.24 billion (RM10.67 billion) by 2030 (Mordorintelligence, 2024). E-commerce is among the major drivers of the postal and courier industry development generating significant revenues, especially during the pandemic caused by the coronavirus (Sułkowski, Kolasińska-Morawska, Brzozowska, Morawski, & Schroeder, 2022). Physical distancing, business lockdowns, and other confinement measures have accelerated growing trends in e-commerce (Beyari, 2021). With consumers facing pandemic-related constraints worldwide, Internet users turned to online shopping more frequently and ordered even essential goods (Guthrie, Fosso-Wamba, & Arnaud, 2021). The quick rise of these e-commerce activities has made it a very competitive industry, and it has forced service providers to ensure that their clients have a wonderful and unforgettable experience (Zhang & Shi, 2022). The rapid development of e-commerce and increasing consumer expectations make service quality improvement an essential objective for postal and courier companies.

A global outbreak of coronavirus known as the COVID-19 pandemic, had caused everyone to remain indoors for their own protection. From that point forward, the concept of e-commerce in Malaysia has been seen as an indispensable industry. There was a massive rise in online purchase. Advancements in digital technology have transformed mailing and delivery service providers in the country (Mazlan, 2021). The last-mile delivery stage is a crucial link in the complex chain of logistics, full of obstacles that seriously affect package safety, particularly when dealing with a varied range of populations. The last leg of the delivery route, it comes with its own set of challenges that require a sophisticated knowledge to guarantee package security. This research does a thorough investigation, painstakingly analysing the complex problems that obscure parcel safety throughout last-mile delivery to a variety of customer types, receiving addresses, and other stakeholders. With this study, the goal is to look into the problems that come up when trying to ensure parcel safety during the last mile of delivery. Following the discussion of the literature review, the methodology, the results, and the discussion, the final section will be devoted to the conclusion and the recommendation.

Literature Review

The last-mile delivery procedure has become an essential component of the supply chain, impacting consumer satisfaction and the postal and courier industries' overall success directly. Ensuring the safety of packages throughout this last leg of delivery is critical since problems in this area can seriously affect courier services' operational effectiveness and reputation. This study of the literature delves into the various aspects of parcel safety in last-mile delivery,

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highlighting important themes, gaps in the literature, and areas that might use further investigation.

Last-mile delivery presents several security difficulties, including theft, tampering, and unauthorised access to packages. Smith (2018) suggested that to reduce hazards and improve the safety of delivered packages, strong security measures are required, such as real-time tracking and secure drop-off locations. A key factor in determining the success of last-mile delivery services is customer perception. Johnson (2020) highlighted that customers' expectations concerning the security and state of delivered packages had a big impact on their level of satisfaction. Service providers must recognise these expectations and fulfil them. According to recent research, it's critical to comprehend how customer perceptions of safety and service quality are impacted by this shifting environment in the last mile of delivery (Jones & Smith, 2019)

One of the main tactics suggested to solve the issues with last-mile delivery safety is technology integration. Meanwhile, Chen and Wang (2019) proposed the use of secure proof of delivery methods, real-time tracking systems, and cutting-edge monitoring technologies as efficient means of improving communication and transparency in the delivery process. Parcel safety problems stem from issues with delivery personnel's behaviour. Research by Brown (2017) highlights the significance of employee training initiatives and stringent oversight protocols in upholding moral principles and fostering consumer confidence. It is impossible to overstate the importance of receiving addresses in last-mile delivery. Jones (2021) pointed out attention to cooperative efforts with clients to optimise delivery sites and access points to improve efficiency and lessen difficulties related to parcel delivery.

Parcel safety in last-mile delivery is also influenced by regulatory frameworks and compliance requirements (DOSH, 2015). To match their operations with legal standards, courier services must ensure responsibility, follow safety guidelines, and give correct package information, according to a report by legal (DOSH, 2015). Creating organised feedback mechanisms is essential for dealing with new issues. According to Yang (2019), customer experience insights allow businesses to quickly pinpoint areas that need development and improve their overall last-mile delivery services. A review of the literature shows that guaranteeing parcel safety in last-mile delivery is a difficult undertaking that is impacted by several issues, such as consumer expectations, security concerns, and regulatory compliance. To tackle these obstacles, a diverse strategy incorporating technology, staff development, stakeholder participation, and a dedication to ongoing enhancement is needed. The postal and courier sectors can improve last-mile delivery services and eventually increase parcel safety and customer happiness by resolving these issues.

Research Methodology

Quantitative research methodology was utilised for the design of this study. According to Zikmund and Babin (2010) quantitative research is a tool using statistics to describe research phenomena. Furthermore, in discovering the strengths of the interval variables in the specific research, the application of quantitative methods is advisable, as it provides statistical outcomes (Sekaran & Bougie, 2016). For the purpose of comprehending and quantifying the experiences of customers with last-mile parcel delivery, a quantitative research strategy makes use of the gathering and examination of numerical data. A Google Form-based structured questionnaire was selected as the research instrument. This questionnaire is a tool designed to gather specific information from respondents regarding their perceptions and experiences with postal and courier services. In the sections of the questionnaire, scalier questions were used. Scale questions are also known as Likert scales. Revilla, Saris, and Krosnick (2013) agree the scale gives better quality and reliability of data. The five-point Likert scale was used for satisfaction. The questionnaire consists of questions a 5-Likert scale (1= Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree) to assess the strength of respondents' opinions. These questions are designed to measure consumer perceptions, expectations, and experiences, especially in the context of last-mile delivery.

In the investigation, a convenience sampling method was utilised. Convenience sampling means selecting respondents based on their accessibility and ease of participation. It's a practical approach for collecting data from a readily available population. Respondents were selected based on their experience and perception of using postal and courier services. Those who have used such services are chosen as they can provide insights into their experiences. The sample size is determined in a way that ensures enough respondents are included to allow for meaningful statistical analysis and to make inferences about the larger population of consumers.

Data has been collected by distributing the structured questionnaire to consumers through Google Form. This online platform simplifies data collection and helps in organizing responses efficiently. In addition to primary data collected through the questionnaire, secondary data is gathered from existing sources such as journal articles. These secondary data sources provide additional information and context to support the study's objectives.

Quantitative analysis emerged as the most important approach to data analysis in this study. This involves the use of statistical techniques to analyse and interpret the numerical data collected from the questionnaire responses. The collected data was analysed using SPSS, a widely used software for statistical analysis. Descriptive analysis in SPSS has been employed to examine the central tendency and dispersion of the data (Sekaran & Bougie, 2016; Zikmund, Babin, Carr, & Griffin, 2010). This includes calculating measures such as means, standard deviations, and frequency distributions to provide a comprehensive overview of the data.

Findings

Demographic Analysis

During the month of August in the year 2023, the questionnaire was distributed and gathered. A total of approximately 245 questionnaires were obtained. The description of the demographic profile for respondent is demonstrated in Table 1.

Table 1: Demographic Profile of Respondents

Items	Percentage (%)	Frequency
1. Gender		
Male	40.8	100
Female	59.2	145
2. Age		
18-29 years	43.7	107
30-39 years	24.1	59
40-49 years	20	49

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50-60years	7.3	18
61 years above	4.9	12
3. Race		
Malay	71.4	175
Chinese	14.7	36
Indian	11.8	29
Others	2	5
4. Education level		
SPM/ MCE/ O-Level	3.7	9
Diploma/STPM/STP/HSC/A-Level	17.1	42
Bachelor Degree	50.6	124
Master Degree	22.4	55
Doctoral Degree	6.1	15
5. Occupation		
Student	29.4	72
Government Sector	20	49
Private Sector	27.8	68
Self Employed	13.9	34
Unemployed	0.8	2
Retiree	4.9	12
Housewife	3.3	8
6. Income		
Less RM2500	44.5	109
RM 2501-RM 3170	9	22
RM 3171-RM 3970	6.9	17
RM 3971-RM 4850	3.7	9
RM 4851-RM 5880	8.6	21
RM 5881-RM 7100	6.5	16
RM 7101-RM 8700	5.7	14
RM 8701-RM 10,970	8.2	20
RM 10971-RM 15,040	4.1	10
More than RM 15,040	2.9	7

The analysis of participant demographics reveals a diverse cross-section of respondents across various categories. The gender distribution within the sample population indicates a slightly higher representation of females (59.2%) compared to males (40.8%). Age-wise, most respondents fall within the 18-29 years bracket, constituting 43.7% of the sample, followed by descending percentages in subsequent age groups. The racial composition highlights a predominant representation of individuals from the Malay ethnic group (71.4%), with notable percentages from Chinese (14.7%), Indian (11.8%), and "Others" (2%) ethnicities. In terms of educational attainment, a significant proportion holds bachelor's degrees (50.6%), followed by master's degrees (22.4%), while smaller percentages possess Diploma/STPM/A-Level qualifications (17.1%), Doctoral degrees (6.1%), or SPM/MCE/O-Level certificates (3.7%).

Professionally, this research covers a diverse range. Of the respondents, 29.4% were students, followed by people from the private sector (27.8%) and people from the public sector (20%). There is also a proportion of self-employed people (13.9%), pensioners (4.9%), housewives

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(3.3%), and a minimal proportion of unemployed people (0.8%). The income distribution shows a diverse range, with the majority earning less than RM2,500 (44.5%) and the proportion varying within different income brackets up to RM15,040 and above. Collectively, these results represent a diverse and multifaceted participant pool and provide comprehensive insight into the demographics of our survey respondents. The questionnaire is collected from several types of residentials. The report for the residentials is reported in Table 2.

Table 2: Type of Residentials

Type of residential	Percentage (%)	Frequency
Public University	20.4	50
Private University	0.8	2
College University	2	5
Polytechnic	4.9	12
College Community	1.2	3
Flat/Apartment/Condominium with doorstep delivery	12.2	30
Service apartment	1.2	7
Studio apartment	1.2	3
SOHO (Small office home office)	1.2	3
Terrace house	25.3	62
Semi Detached house	3.3	8
Cluster home	2.0	5
Townhouse	2.2	5
Villa	1.2	3
Bungalow	19.0	46
Others	0.2	1

The assessment of residential types conducted in the study shows a diverse distribution among the participants. According to the data, most people live in terraced houses (25.3%), followed closely by those living in bungalows (19.0%). Regarding institutional residential, a significant proportion of respondents (20.4%) lived in public universities, suggesting a significant presence of students and people associated with these institutions. However, minimal proportions were observed at private universities (0.8%), graduate universities (2%), technical colleges (4.9%), and community colleges (1.2%), with This indicates relatively low participation among people in the country. A significant proportion of those surveyed live in various types of apartments or housing complexes. This includes residents of apartments/apartments/condos with doorstep delivery (12.2%), serviced apartments (1.2%), studio apartments (1.2%), and SOHO residents. (Small offices/home offices) (1.2%), semi-detached houses (3.3%), cluster houses (2.0%), townhouses (2.2%), villas (1.2%). Additionally, a small proportion live in other housing types classified as 'other' (0.2%).

The distribution of residential types within the study population shows a wide range of housing preferences and housing types. The prevalence of single-family houses such as terraced houses and bungalows indicates that a significant proportion of people live in traditional housing structures. On the contrary, the existence of various types of residents, such as apartments, housing complexes, and institutional housing complexes, shows the diversity of living styles and ways of living. This diverse housing representation in survey data can potentially impact various aspects such as accessibility to amenities, community dynamics, and lifestyle

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preferences. The results for the frequently used by the user are reported in Table 3. This result shows the frequently uses and frequently uses of the courier service in month and a year.

Table 3: Frequently Used of Courier Service

Frequently Uses	Percentage (%)	Frequency
Have you used any courier service before?		
Yes	100 %	245
No	0	0
How often do you use courier service in a month?		
1 time	16.7	41
2 times	15.1	37
3 times	40.0	98
4 times	17.1	42
Others	11.0	27
How often do you use courier service in a year?		
Less than 10 times	35.5	87
11-20 times	27.8	68
21-30 times	20.4	50
31- 40 times	7.8	19
More than 40 times	8.6	21

The data collected underscores a significant prevalence of courier service usage among the surveyed participants. Remarkably, every respondent (100%) has utilized a courier service at some point. This universal engagement indicates the widespread reliance on such services within the surveyed population. Regarding the frequency of usage within a month, most respondents exhibit regular utilization patterns, with 40% availing courier services thrice a month. Additionally, 16.7% use these services once a month, while 15.1% and 17.1% utilize them twice and four times a month, respectively. An 11% fraction constitutes the category termed "Others," suggesting diverse usage patterns beyond the defined frequencies. In terms of yearly usage, the data indicates a diverse range of engagement. The largest segment, comprising 35.5% of respondents, uses courier services less than ten times a year. Following this, 27.8% utilize them between 11 to 20 times annually, and 20.4% within the range of 21 to 30 times yearly. Smaller segments use these services more frequently, with 7.

The results of 7.8% utilizing them between 31 to 40 times a year and 8.6% exceeding 40 times annually. The total commitment to using delivery services (100%) indicates that these services are essential in the lives of the respondents. Frequent usage patterns within a month, especially the high proportion of users who use these services three times a month, indicate that courier services are used continuously for a variety of purposes, including delivery, logistics, and interpersonal interactions.

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Frequency Analysis

Table 4: Frequently Analysis for the Challenges

Challenges	Scale	Frequency	Percentage
Incompetence Delivery Man	Most Challenging	21	8.6
	Very Challenging	10	4.1
	Highly Challenging	19	7.8
	Quite Challenging	23	9.4
	Moderately Challenging	33	13.5
	Somewhat Challenging	31	12.7
	Mildly Challenging	28	11.4
	Slightly Challenging	18	7.3
	Relatively Easy	17	6.9
	Least Challenging	45	18.4
De-Regulate	Most Challenging	17	6.9
	Very Challenging	13	5.3
	Highly Challenging	14	5.7
	Quite Challenging	35	14.3
	Moderately Challenging	37	15.1
	Somewhat Challenging	23	9.4
	Mildly Challenging	27	11
	Slightly Challenging	22	9
	Relatively Easy	13	5.3
	Least Challenging	44	18
Non-Standardize Courier Equipment Tools	Most Challenging	9	3.7
	Very Challenging	13	5.3
	Highly Challenging	22	9
	Quite Challenging	25	10.2
	Moderately Challenging	33	13.5
	Somewhat Challenging	26	10.6
	Mildly Challenging	39	15.9
	Slightly Challenging	19	7.8
	Relatively Easy	21	8.6
	Least Challenging	38	15.5
Highly Competitive Market	Most Challenging	16	6.5
	Very Challenging	10	4.1
	Highly Challenging	20	8.2
	Quite Challenging	27	11
	Moderately Challenging	37	15.1
	Somewhat Challenging	28	11.4
	Mildly Challenging	37	15.1
	Slightly Challenging	19	7.8
	Relatively Easy	16	6.5
	Least Challenging	35	14.3

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AIJBES
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Volume 6 Issue 20 (June 2024) PP. 131-145
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Price War	Most Challenging	17	6.9
	Very Challenging	12	4.9
	Highly Challenging	16	6.5
	Quite Challenging	21	8.6
	Moderately Challenging	39	15.9
	Somewhat Challenging	39	15.9
	Mildly Challenging	38	15.5
	Slightly Challenging	18	7.3
	Relatively Easy	9	3.7
	Least Challenging	36	14.7
Improper Parcel Of Handling	Most Challenging	11	4.5
	Very Challenging	12	4.9
	Highly Challenging	15	6.1
	Quite Challenging	18	7.3
	Moderately Challenging	35	14.3
	Somewhat Challenging	42	17.1
	Mildly Challenging	38	15.5
	Slightly Challenging	21	8.6
	Relatively Easy	18	7.3
	Least Challenging	35	14.3
Inadequate Route Planning	Most Challenging	9	3.7
	Very Challenging	8	3.3
	Highly Challenging	18	7.3
	Quite Challenging	18	7.3
	Moderately Challenging	37	15.1
	Somewhat Challenging	33	13.5
	Mildly Challenging	49	20
	Slightly Challenging	20	8.2
	Relatively Easy	17	6.9
	Least Challenging	36	14.7
Unpredictable Elements	Most Challenging	14	5.7
	Very Challenging	8	3.3
	Highly Challenging	18	7.3
	Quite Challenging	20	8.2
	Moderately Challenging	29	11.8
	Somewhat Challenging	37	15.1
	Mildly Challenging	29	11.8
	Slightly Challenging	33	13.5
	Relatively Easy	18	7.3
	Least Challenging	39	15.9
Low Efficiency Levels	Most Challenging	17	6.9
	Very Challenging	9	3.7
	Highly Challenging	13	5.3
	Quite Challenging	20	8.2

Advanced International Journal of Business, Entrepreneurship and SME's
AIJBES
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	Moderately Challenging	38	15.5
	Somewhat Challenging	24	9.8
	Mildly Challenging	34	13.9
	Slightly Challenging	24	9.8
	Relatively Easy	25	10.2
	Least Challenging	41	16.7
Transparency	Most Challenging	14	5.7
	Very Challenging	12	4.9
	Highly Challenging	16	6.5
	Quite Challenging	21	8.6
	Moderately Challenging	32	13.1
	Somewhat Challenging	31	12.7
	Mildly Challenging	34	13.9
	Slightly Challenging	17	6.9
	Relatively Easy	20	8.2
	Least Challenging	48	19.6

Based on the Table 4, the first changes are incompetent delivery man is the first problem. The results indicates that 18.4% of respondents view this task as "Least Challenging," while 8.6% of respondents view it as "Most Challenging". This suggests that opinions about how competent delivery staff are differing. Second challenges are De-Regulate. This is viewed as "Least Challenging" by 18% of respondents, while 6.9% find it to be "Most challenging." This obstacle may have to do with regulations and how they affect the sector. Next is about non-standardize courier equipment tools are rated as "Most Challenging" by 3.7% of respondents, whilst 15.5% think they are "Least Challenging." This raises questions regarding the lack of uniformity in courier gear.

Besides that, the challenges also highlight about highly competitive market. The results indicates that 6.5% of respondents rated it as "Most Challenging," while 14.3% said it was "Least Challenging." This illustrates the difficulty in a market that is extremely competitive. The challenges about price war, 6.9% of respondents view it as "Most Challenging," while 14.7% view it as "Least Challenging." This difficulty relates to the industry's fierce pricing competition. For the improper parcel handling, 4.5% find it to be "Most Challenging" and 14.3% find it to be "Least Challenging." This challenge has to do with problems related to package management.

Inadequate route planning was rated as "Most Challenging" by 3.7% of respondents, while 14.7% thought it was "Least Challenging." This implies challenges with delivery route optimisation. For the unpredictable elements, 5.7% of respondents view it as "Most Challenging," while 15.9% view it as "Least Challenging." Dealing with unanticipated or unknown circumstances impacting deliveries is probably this difficulty. The results for the low efficiency levels, 6.9% and 16.7%, respectively, find it to be "Most Challenging" and "Least Challenging." This task is a reflection of industry concerns over operational efficiency. Lastly about the transparency, ranked "Least Challenging" by 19.6%, while 5.7% found it to be "Most Challenging." This obstacle may be related to problems with courier services' information transparency. These results show the different kinds of difficulties the courier service sector

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AIJBES
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DOI 10.35631/AIJBES.620012

faces. If these issues are properly resolved, the industry's service quality, operational effectiveness, and consumer satisfaction may all suffer considerably.

Descriptive Analysis

Table 5: Descriptive Analysis for the Challenges

Items	Mean	Std. Deviation
Incompetence Delivery Man	6.06	2.829
De-Regulate	6.00	2.770
Non-Standardize Courier Equipment Tools	6.19	2.614
Highly Competitive Market	5.97	2.641
Price War	5.93	2.600
Improper Parcel of Handling	6.22	2.513
Inadequate Route Planning	6.33	2.443
Unpredictable Elements	6.33	2.616
Low Efficiency Levels	6.34	2.706
Transparency	6.33	2.736

Based on the Table 5, the challenges of a "Price War" were evaluated 5.93 on average by respondents, with a standard deviation of 2.600. This indicates that respondents view this difficulty as somewhat significant or worrying on average, with some variation in respondents' experiences or assessments of the severity of price wars in the company. For the low efficiency levels with a mean rating of 6.34, this challenge was rated more highly. The higher mean indicates that respondents saw the pricing war as a less significant problem than poor efficiency levels on average. As with the last task, though, there is variation in the answers, suggesting that respondents had varying opinions on the severity of efficiency-related problems.

Table 6: Result of Independent Samples Test for the Issues and Challenges

Variable	Challenges	Decision
Gender	0.283	No different

Table 7: Result of One Way ANOVA for the Issues and Challenges

	Variables	Challenges Significant	Decision
Types Of Customers	Age	0.639	No different
	Race	0.625	No different
	Education Level	0.277	No different
	Occupation	0.777	No different
	Income	0.751	No different
Receiving Addresses	Address	0.207	No different
	USED/M	0.310	No different

Advanced International Journal of Business, Entrepreneurship and SME's
AIJBES
EISSN: 2682-8545
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Other Contributors	USED/Y	0.003	Have different

Table 6 and Table 7 show the results for the t-test and One-Way ANOVA respectively. This analysis is to test the issues and challenges in ensuring parcel safety during last-mile delivery to different demographics comprising types of customers, receiving addresses, and other contributors which could affect postal article safety and quality of delivery. From Table 6, the results show the effects of the issues and challenges to the gender. Both issues and challenges are not significant effects to the gender and conclude that there is no different for the effects of the issues and challenges to the gender.

Table 7 shows the results for the challenges to the types of customers, receiving address and other contributors' factors. The results indicates that the effects of the issues to receiving addresses and other contributors (USED/M and USED/Y) are significant and can conclude that the issues have a different effect to the receiving address and other contributors (USED/M and USED/Y). Results for the challenges indicate that only other contributors (USED/Y) have a significant effect.

Conclusion and Recommendations

The challenges that have been found in the last-mile delivery industry offer an in-depth description of the difficulties that courier service providers must overcome. The investigation concentrated on a number of challenges, from problems with delivery staff to outside variables including market competition and regulatory problems. The frequency analysis revealed that the opinions of the respondents regarding the degree of difficulty associated with each item were of varying degrees.

Total 18.4% of responders said the Incompetence Delivery Man assignment was "Least Challenging," while 8.6% thought it was "Most Challenging." There is a significant difference in beliefs about how competent delivery staff are. Of those surveyed, 18% thought deregulation was "Least Challenging," while 6.9% thought it was "Most Challenging." This implies differing opinions on how rules affect the sector. 15.5% of respondents viewed the absence of standardisation in courier equipment tools as "Least Challenging," while 3.7% said it was "Most Challenging." This raises questions regarding the homogeneity of courier equipment. A very competitive market received ratings of 14.3% for "Least Challenging" and 6.5% for "Most Challenging." This emphasises the difficulties brought on by fierce market rivalry. 14.7% of respondents said a pricing war was "Least Challenging," while 6.9% thought it was "Most Challenging." The findings highlight the challenges brought about by industry pricing competitiveness. Of those that viewed improper parcel handling, 14.3% judged it to be "Least Challenging" and 4.5% found it to be "Most Challenging." This suggests that there are issues with how packages are handled during delivery.

Around 14.7% of respondents deemed route planning issues to be "Least Challenging," while 3.7% deemed them to be "Most Challenging." This implies problems with delivery route optimisation. Unpredictable components were rated as "Most Challenging" by 5.7% of respondents, while 15.9% thought they were "Least Challenging." This demonstrates how difficult it may be to handle unanticipated events throughout the delivery process. Low efficiency levels were seen as "Most Challenging" by 6.9% of respondents, while 16.7% thought they were "Least Challenging." This illustrates worries about the industry's operational

Volume 6 Issue 20 (June 2024) PP. 131-145
DOI 10.35631/AIJBES.620012
effectiveness. Total 19.6% of respondents evaluated transparency problems as "Least Challenging," while 5.7% rated them as "Most Challenging." This suggests that there may be problems with the information supplied by courier services being transparent.

These results highlight the complexity of the problems encountered in last-mile delivery. To improve consumer satisfaction, operational effectiveness, and service quality, the industry has to proactively address these difficulties. For courier service providers to be successful over the long term, they will need to address difficulties with staff competency, regulatory concerns, equipment standardisation, market competitiveness, and operational efficiency. Adaptability and focused solutions to these problems will be crucial for satisfying consumer demands and preserving a competitive advantage in the market as the last-mile delivery landscape changes (Izzah, Rifai, & Yao, 2016).

The study's conclusions provide a detailed grasp of the many difficulties that the last-mile delivery sector faces and highlight issues that need to be addressed right now (Kee et al., 2021). A proactive strategy is necessary to improve overall service quality, operational efficiency, and customer pleasure. First and foremost, extensive training plans that target ineptitude and guarantee excellent customer service should be developed in order to improve the competency of delivery personnel. Working together with regulatory agencies is essential to successfully navigating changing legislation, guaranteeing compliance and operational flexibility. It is advised that courier equipment tools be standardised throughout the sector to promote uniformity and optimise operating procedures. Innovative differentiators combined with strategic market positioning are essential to overcome the obstacles brought on by fierce competition in the industry. A balance between profitability and competitiveness may be achieved by implementing loyalty programmes and evaluating and optimising pricing tactics. To address issues with parcel handling, route planning, and unforeseen events, strict procedures for secure package handling, cutting-edge route optimisation tools, and backup plans are crucial. Overcoming industry concerns will need persistent efforts to improve operational efficiency through technology and reduced procedures.

Finally, resolving concerns pertaining to information transparency depends critically on open and honest information sharing, timely updates, and reliable lines of contact. In addition to overcoming present obstacles, courier service providers may set themselves up for long-term success in the ever-changing last-mile delivery market by proactively implementing these strategies. Ultimately, it can be concluded that the logistics courier services industry has a promising future and has the potential to become a significant industry. There is a mutual dependence between e-commerce and logistics courier services in order to assure the accomplishment of business goals successfully. In order to accomplish the objective of speed and efficiency, a clear vision is required to achieve customer pleasure. When it comes to future research, the option of undertaking the same study in the new context, which focuses on the level of job satisfaction experienced by staffs in courier service line. The addition of an interview as one of the research methods is something that can do in order to acquire additional information and address elements of our research topic that remain incomplete.

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References

Beyari, H. (2021). Recent e-commerce trends and learnings for e-commerce system development from a quality perspective. *International Journal for Quality Research, 15*(3), 797–810.

Brown, A. (2017). Ethical practices in last-mile delivery: A focus on employee integrity. *Journal of Business Ethics, 145*(2), 359-373.

Chen, Q., & Wang, L. (2019). Technological innovations in last-mile delivery safety. *Transportation Research Part E: Logistics and Transportation Review*, *125*, 102-117.

DOSH, D. o. O. S. a. H. (2015). The Guidelines on Occupational Safety and Health in Courier Services Industry. Retrieved from https://www.dosh.gov.my/index.php/legislation/guidelines/general/1803-03-guidelines-in-courier-services-industry-2015/file

Guthrie, C., Fosso-Wamba, S., & Arnaud, J. B. (2021). Online consumer resilience during a pandemic: An exploratory study of e-commerce behavior before, during and after a COVID-19 lockdown. *Journal of Retailing and Consumer Services, 61*(July 2021), 102570.

Izzah, N., Rifai, D., & Yao, L. (2016). Relationship-courier partner logistics and e-commerce enterprises in Malaysia: A review. *Indian Journal of Science and Technology, 9*(9), 1-10.

Johnson, M. (2020). Last-mile delivery: Customer perceptions and expectations. *International Journal of Logistics Management, 31*(4), 1012-1035.

Jones, M., & Smith, A. (2019). The Last-Mile dilemma: navigating challenges in modern commerce. *Journal of Logistics Management, 25*(2), 78-95.

Jones, R. (2021). Optimizing last-mile delivery through cllaborative receiving address management. *Transportation Research Part C: Emerging Technologies, 122,* 102-118.

Kee, D. M. H., Nasser, S. N. A., Sany, N. S. M., Azhar4, T. I., Roslan, Z. H., & Amli, N. A. (2021). The strategy, impact, and challenges faced by Pos Malaysia Berhad during the COVID-19 crisis. *Journal of The Community Development in Asia, 4*(2), 13-25.

Mazlan, M. T. (2021). Challenge e-commerce to the logistics courier services provider during MCO in Malaysia. *IOSR Journal of Business and Management (IOSR-JBM), 23*(2), 59-62.

Mordorintelligence. (2024). Statistics for the 2023 & 2024 Malaysia Courier, Express, And Parcel (cep) market size Retrieved from https://www.mordorintelligence.com/industry-reports/malaysia-courier-express-and-parcel-cep-market/market-size

Revilla, M. A., Saris, W. E., & Krosnick, J. A. (2013). Choosing the number of categories in agree–disagree scales. *Sociological Methods & Research, 43*(1), 73-97.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach* (7th ed.). West Sussex, UK: Wiley.

Smith, J. (2018). Securing last-mile deliveries: A comprehensive approach. *Journal of Logistics Security, 12*(2), 45-60.

Sułkowski, Ł., Kolasińska-Morawska, K., Brzozowska, M., Morawski, P., & Schroeder, T. (2022). Last mile logistics innovations in the courier-express-parcel sector due to the COVID-19 pandemic. *sustainability, 14*(13), 8207.

Trini, D., & Salim, M. N. (2018). Customer Experience Marketing (CEM), customer satisfaction and customer trust affects customer loyalty: a study on star hotels in Jakarta Province. *Business Management and Strategy, 9*(2).

Yang, L. (2019). Enhancing last-mile delivery through continuous customer feedback. *International Journal of Logistics Research and Applications, 22*(5), 469-488.

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DOI 10.35631/AIJBES.620012

Zhang, M., & Shi, G. (2022). Consumers' impulsive buying behavior in online shopping based on the Influence of social presence. *Computer Intelligence and Neuroscience, 2022*.

Zikmund, W. G., & Babin, B. J. (2010). *Essentials of marketing research* (4th ed.). Mason, OH: South-Western Cengage Learning.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods* (8th ed.). Mason, OH: South-Western Cengage Learning.