

Why Online Sellers Switch? The Role of Pleasure, Engagement and Co-creation of Online Sellers' Behaviour on Courier Services

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ABSTRACT

Online sellers tend to consider switching couriers due to increasing customer complaints about courier service quality. This study examined the influencing factors of online sellers' pleasure, engagement, and switching intention in Malaysia. The study used stimulus-organism-response (SOR) theory and contributed new stimuli (access convenience, conflict handling, and co-creation)-organism (pleasure and engagement)-response (switching intention) model. The study also introduced single and sequential mediators. Furthermore, co-creation moderated engagement and switching intention. Data were collected from 389 online sellers using an online survey. The analysis included only 257 responses. The data were analysed using partial least squares-structural equation modelling (PLS-SEM). Findings show that access convenience and conflict handling positively affected pleasure, while pleasure positively affected engagement and engagement negatively affected switching intention. Moreover, co-creation positively affected engagement. Pleasure and engagement sequentially mediated access convenience and switching intention, conflict handling and switching intention. Engagement mediated co-creation and switching intention. The adverse correlation between engagement and switching intention was intensified by low co-creation. The results will aid couriers in enhancing and innovating services for customers' pleasure and engagement. Also, the results will aid online sellers in establishing high standards for selecting the best couriers.

Keywords: *couriers, online sellers, SOR theory, switching intention*

1. INTRODUCTION

The Malaysian business-to-consumer (B2C) sector is projected to grow at a compound annual growth rate of 16.11% from 2022 to 2026 (Business Wire, 2022). According to GlobalData (2024), Malaysia's e-commerce market is expected to expand by 12.8%, rising from MYR 44.6 billion (USD 9.8 billion) in 2023 to MYR 50.3 billion (USD 11 billion) in 2024. Despite the challenges posed by the COVID-19 pandemic, many consumers are increasingly shifting from offline to online shopping. This growth in the e-commerce market also positively impacts various stakeholders, including online sellers, online buyers or shoppers, and courier service providers (Bosona, 2020).

Many online sellers promote and sell their products through various online channels, such as WhatsApp, Facebook, Instagram, Shopee, Lazada, Zalora, and TikTok Shop. This widespread online retailing significantly impacts last-mile logistics, also known as last-mile delivery (LMD). LMD refers to the final stage of transporting goods from distribution centres to end customers. It encompasses the process of customers making online purchases from sellers and couriers delivering those goods to customers' homes or workplaces. As online shopping continues to grow, the challenges associated with LMD also increase (Ewedairo *et al.*, 2024). Effective LMD involves delivering goods to customers while meeting their needs and ensuring a positive shopping experience. Consequently, LMD plays a crucial role in helping couriers meet the expectations of online sellers and buyers.

Courier services can be considered as logistics service providers (LSPs) as they facilitate parcel deliveries for online sellers to their customers. These logistics service providers, often called third-party logistics (3PL) companies,

coordinate the transportation of goods from production facilities to end users. With a formal agreement or contract in place, the courier acts as a 3PL in both business-to-business (B2B) and business-to-consumer (B2C) supply chains (Yunus, 2021). Additionally, courier service providers focus on delivering finished goods (or packages) to customers and tend to develop strong relationships with individuals and companies engaged in online business who heavily rely on their services (Izzah *et al.*, 2021).

Today, the courier market of the Malaysian last-mile delivery (LMD) sector has become increasingly competitive as increasing customer expectations have encouraged couriers to enhance their services (Jarocka & Wang, 2018). Pos Malaysia holds 40% of the LMD market share, while competitors (J&T Express, Ninja Van, GD Express and City-Link Express) share the remaining 60% (Lee & Lee, 2020). Given the high online shopping demand, domestic courier items delivered in Malaysia increased from 105.5 million to 690 million between 2016 and 2022 (Statista, 2023). Nonetheless, customer complaints increased by 311.34%, rising from 370 in 2019 to 1,527 in 2023 (KPDN, 2024). This significant increase highlights customers' frustration with the services, leading them to consider switching to other couriers that offer better service quality.

Most couriers have consistently implemented effective strategies to satisfy their customers and reduce their likelihood of switching to competitors. Parvin *et al.* (2021) argue that attracting new customers or those switching from other couriers is more costly than retaining existing ones. Efficient handling of delivery services can lower customer complaints, which helps prevent online sellers from losing customers to competitors. Despite the growing number of online shoppers, many online sellers struggle to achieve customer satisfaction and loyalty. Online shoppers often express their complaints to sellers (Mazhar *et al.*, 2022) and request refunds after a few days if the item is damaged or fails to arrive. Additionally, product returns can be inconvenient for online sellers, especially if damage occurs due to courier negligence during delivery. Retrieving physical products from consumers is particularly challenging and costly (Weber & Badenhorst-Weiss, 2018). For these reasons, many entrepreneurs and small to medium-sized enterprises (SMEs) have collaborated with couriers or third-party logistics companies to create a more efficient supply chain.

In the logistics industry, competition among couriers has intensified as many offer similar services and pricing (Rawis *et al.*, 2022). For online sellers, choosing the right courier is essential for ensuring high customer loyalty among shoppers. Customers' perceptions of the delivery service also directly influence the seller's reputation. Furthermore, online sellers are likely to switch couriers if they experience inconvenient services, leading to decreased loyalty (Pieters *et al.*, 2019). Although 98% of couriers have improved their services, and many have made significant investments in IT solutions, 40% of online sellers still choose to switch to other couriers. Additionally, 86% of courier companies are open to outsourcing services to competitors to cut logistics costs, which is causing online sellers to switch to those competitors (Langley, 2020). Online sellers often change couriers because of problems such as late deliveries, inadequate service, unprofessional staff behaviour (Wu & Dong, 2023), inconvenient locations and operating hours, and poor

handling of conflicts. Retaining customers is important for ensuring long-term business sustainability (Nghah *et al.*, 2023). Therefore, it is imperative for courier services to assess the variables that might compel customers to switch to competitors.

While previous research mainly examined customers' perspectives and reuse intention, few studies have investigated switching intentions in the LMD industry. Nghah *et al.* (2021a) studied online sellers' satisfaction and reuse intention, while Ejdy and Gulc (2020) studied trust, perceived service quality, and reuse intention. Nghah *et al.* (2023) linked satisfaction with switching intention, where conflict handling and customer relationship management (CRM) were factors. While satisfaction negatively affected switching intention, other variables (access convenience, co-creation, pleasure, and engagement) have been underexplored. Most switching intention studies applied the theory of planned behaviour (TPB) or the push-pull-mooring (PPM) theory (Yuen *et al.*, 2022). Few studies have using the stimulus-organism-response (SOR) theory. As such, this study aimed to explore online sellers' behaviour toward couriers, focusing on switching intentions in last-mile delivery (LMD). Furthermore, this study enhances the literature by using the SOR theory regarding switching intention, specifically within the LMD sector, to address the gap that exists.

This study expands the current body of literature by developing a new SOR model. Pleasure and engagement were proposed as single and sequential mediators, respectively. Lastly, co-creation was proposed as a new moderator of engagement and switching intention.

2. LITERATURE REVIEW

2.1 Stimulus-Organism-Response (SOR) Theory

Mehrabian and Russell (1974) introduced the stimulus-organism-response (SOR) theory, which includes the stimulus (environmental factors), the organism (customer's emotional state), and the response (behavioural outcome). The theory clarifies the relationships between variables and supports model development (Nghah *et al.*, 2021a). In this study, the stimuli were access convenience, conflict handling, and co-creation; the organisms were pleasure and engagement, which influenced the response, which was switching intention. Figure 1 illustrates the conceptual framework.

2.2 Access Convenience

Customer satisfaction is frequently equated with pleasure (Fernandes *et al.*, 2022). Nevertheless, research on the relationship between access convenience and customer pleasure is limited. Access convenience encompasses the shop's location, parking accessibility, business hours, and service through online, phone, or in-person platforms (Seiders *et al.*, 2007). In LMD, customer satisfaction or pleasure could be improved by providing easy drop-off access for weekend parcels, preventing customers from switching. Access convenience positively affects customer satisfaction (Vo & Van Nguyen, 2022). Thus, this investigation posited the subsequent hypothesis:

H1: Access convenience positively affects online sellers' pleasure.

2.3 Conflict Handling

Customers dissatisfied with a company's conflict resolution will likely cancel services or switch to competitors

(Governor & Ayodele, 2020). Conflict handling is a service provider's ability to avoid potential disputes, resolve conflicts before customers cause difficulties, and openly discuss alternatives with customers when solving their issues (Nghah *et al.*, 2023). Couriers must also prioritise effective complaint management. Mishandled customer complaints affect customer happiness. Effective conflict handling would lead to a positive outcome, discouraging further customer complaints and increasing customer satisfaction (Nghah *et al.*, 2023) or pleasure. In this study, satisfaction refers to the customer feeling happy, pleasant, or joyful (Fernandes *et al.*, 2022). Considering the preceding studies, this study suggested the subsequent hypothesis:

H2: *Conflict handling positively affects online sellers' pleasure.*

2.4 Co-creation

Co-creation refers to active participation by companies with customers to create value for both parties. The participation improves solutions or develops new solutions (Roberts & Darler, 2017). In co-creation, both parties share mutual knowledge, agreement, and understanding, which enables companies to meet customers' expectations (Nysveen & Pedersen, 2014). In the case of LMD, co-creation serves as a stimulus when sellers collaborate with couriers to provide effective logistics services. An example of co-creation is when a courier company demonstrates its appreciation by allowing online sellers to request couriers to collect parcels directly from their homes or shops, saving the customer's time.

Customers who participate in co-creation demonstrate higher engagement with the service brands of a company (Hussain *et al.*, 2021) and loyalty to these brands. Many studies have discussed how customer engagement has motivated customer participation in co-creation, but studies on whether customer participation in co-creation enhances company brand engagement are limited (Cheung *et al.*, 2021). Considering the aforementioned information, the study posits the subsequent hypothesis:

H3: *Co-creation positively affects online sellers' engagement.*

2.5 Pleasure

Pleasure is how a person experiences positive emotions in their environment, such as happiness, joy, contentment, or satisfaction (Fernandes *et al.*, 2022). de Oliveira Santini *et al.* (2020) reported that customers who derive pleasure from using the service of a company are three times more engaged with the company. Banik (2021) reported that customers who visited a phygital (physical and digital) store and actively participated in happy and pleasant activities were likelier to re-visit and re-engage with the store. The result demonstrated that pleasure positively affected customer engagement. This study used pleasure as an organism to determine whether customers' pleasure motivated their engagement with couriers. Therefore, this study investigated whether online sellers' pleasure can increase courier brand engagement and suggested the following hypothesis:

H4: *Pleasure positively affects online sellers' engagement.*

2.6 Engagement

Engagement refers to customers feeling fully involved and deeply connected to the service provided (Cheung *et al.*,

2015). Do *et al.* (2020) believe engaged customers are likelier to use the services of companies for longer periods and less likely to switch. Customer engagement has two important outcomes: a positive relationship with loyalty and a negative relationship with switching intention (Rabbanee *et al.*, 2019). Menidjel *et al.* (2023) focused on switching intention and reported that engagement negatively influenced switching intention in gym services. This study describes engagement as online sellers' robustness, commitment, and interest in working with their preferred couriers in LMD. Therefore, the following hypothesis was proposed:

H5: *Engagement negatively affects online sellers' switching intention.*

2.7 Switching Intention

Wang *et al.* (2019) defined switching intention as customers' willingness to switch to other brands or service providers. Some customers even switched to other brands as the brands offered more attractive and more extensive choices (Kuo, 2020). Furthermore, customers' satisfaction or pleasure depends on whether the services meet or exceed their expectations. In LMD, customers plan to switch couriers in response to online shoppers' reviews and feedback. Switching could also decrease revenue, result in market share loss, weaken a reputation, and result in the necessity of marketing campaigns to attract new customers (Al-Gharaibah, 2020).

2.8 Mediating Effect of Pleasure & Engagement

Vo and Van Nguyen (2022) reported that access convenience influences customer satisfaction, which holds the same meaning as pleasure (Fernandes *et al.*, 2022). Banik (2021) proved that pleasure positively affected customer engagement. His study confirmed that a pleasant customer experience with the service of a phygital retail shop increased engagement and reduced switching intention (Menidjel *et al.*, 2023). Additionally, access convenience negatively affected switching intention (Ghamry & Shamma, 2022). Customers feel pleasant and engaged when couriers offer convenient weekend parcel drop-off, personalised attention, and friendly customer service, and would not switch to other couriers. Thus, the intricate relationship between access convenience, pleasure, engagement, and switching intention is justified. Accordingly, pleasure and engagement were proposed as sequential mediators for the relationship between access convenience and switching intention, and the following hypothesis was suggested:

H6: *Pleasure and engagement negatively and sequentially mediate the connection between access convenience and switching intention.*

Nghah *et al.* (2023) reported that conflict handling negatively influences switching intention. Additionally, online sellers feel more satisfaction and become more engaged with couriers based on how couriers handle and reduce conflicts, which prevents sellers from switching to other couriers. Based on H2, H4, and H5, the authors proposed that pleasure and engagement sequentially mediate the connection between conflict handling and switching intention. This justifies the intricate connection among conflict handling, pleasure, engagement and switching intention. Therefore, the following hypothesis was suggested:

H7: *Pleasure and engagement negatively and sequentially mediate the connection between conflict handling and switching intention.*

Previous research supported the need for engagement as a mediator in relation to H3 and H5. Mohammad and Abouelezz (2021) reported that co-creation negatively affected customers' switching intention. Furthermore, a successful courier-seller partnership enhances engagement and reduces the likelihood of switching. In this study, couriers collaborated with sellers to create a mutual understanding of delivery terms and exerted extra efforts to ensure that buyers successfully received the goods. To the authors' best knowledge, no study has investigated engagement as a mediator of co-creation and switching intention. Therefore, the authors formulated the following hypothesis:

H8: *Engagement negatively mediates the connection between co-creation and switching intention.*

2.9 Moderating Role of Co-creation

Recently, customers have become product or service buyers, creative contributors and providers in value creation. The customer and the company cooperate to create value that benefits both parties (Sheth & Hellman, 2018). Companies agree that applying the value co-creation concept is a

strategy for retaining valuable customers (Anshu *et al.*, 2022). Meng and Cui (2020) reported that co-creation enhanced the influence of experience on increased perceived value and favourable attitudes. Pee (2016) determined that co-creation enhanced the effects of experiences on increased purchase intention and behaviour. Nevertheless, co-creation can be a low to high moderator based on the type of service (Carbonell *et al.*, 2009).

Most couriers used co-creation value to enhance service and reduce switching intention. High co-creation enhances customer engagement and likely decreases customers' switching intention. Low co-creation enhances the negative relationship between engagement and switching intention is strengthened. Empirical studies on co-creation as a moderator of engagement and switching intention are limited. Therefore, the authors aimed to identify the relationship co-creation aids in creating when it acts as a moderator to learn more about the co-creation effect strength or weakness on customers' engagement and their intention to switch. Therefore, the authors put forth the hypothesis below:

H9: *A lower co-creation strengthens the negative relationship between engagement and switching intention.*

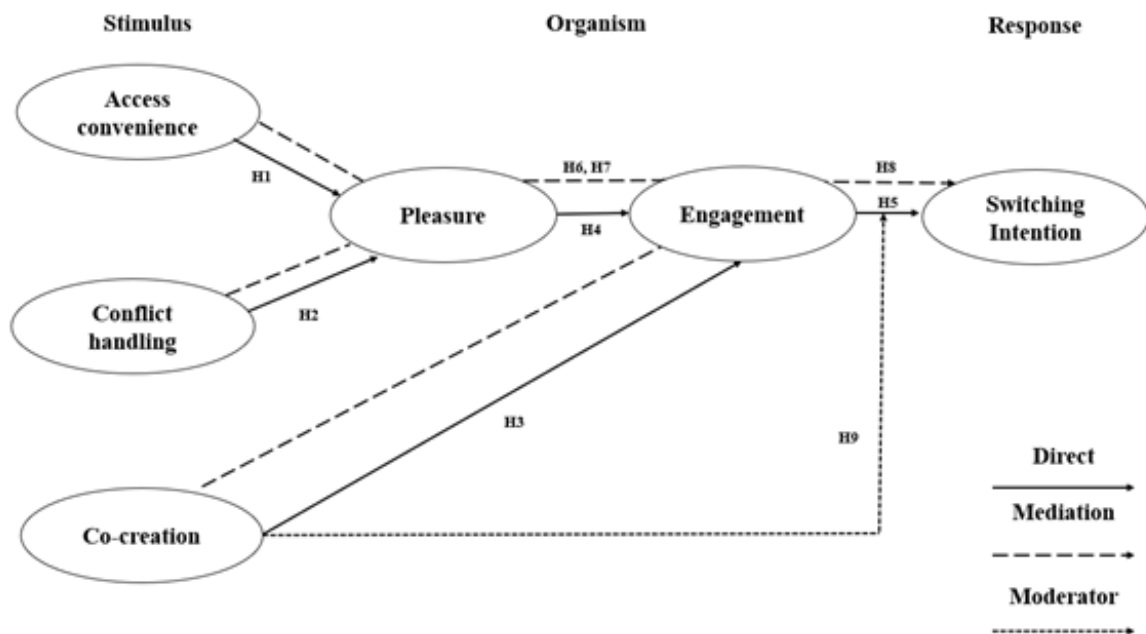


Figure 1 Conceptual framework

3. RESEARCH METHODOLOGY

3.1 Research Instrument

The questionnaire involved the respondents' demographics and the measurement items. The 23 measurement items explaining all constructs were adopted from the related literature. Access convenience items were taken from Roy *et al.* (2020), switching intention items from Ngah *et al.* (2023), co-creation items from Anshu *et al.* (2022), pleasure items from Alsaggaf and Althonayan

(2018), and engagement items from Moliner *et al.* (2018). The stimuli were measured on a 1–5 scale (1 = strongly disagree, 5 = strongly agree). Pleasure items were rated from 1 (unhappy) to 7 (happy), 1 (annoyed) to 7 (pleased), 1 (unsatisfied) to 7 (satisfied), and 1 (despairing) to 7 (hopeful). Engagement items ranged from 1 (strongly disagree) to 7 (strongly agree). Switching intention items ranged from 1 (unlikely) to 7 (likely), 1 (improbable) to 7 (probable), and 1 (no chance) to 7 (certain). The common method variance (CMV) was reduced by using different Likert scales for independent (five-point) and dependent variables (seven-point) (Podsakoff *et al.*, 2003).

3.2 Sampling

This study used purposive sampling as the population targeting online sellers who promote products on social media (Facebook, WhatsApp, Instagram) and use courier services was unknown (Sarstedt *et al.*, 2018; Hassan *et al.*, 2021). The Google Forms survey link was shared via social media groups, and data were collected from January 2024 to May 2024. The response rate was increased by strongly encouraging the respondents to share the questionnaire link with their colleagues, thus extending snowball sampling in the data collection (Nghah *et al.*, 2023).

Filter questions were used to ensure that valid respondents met the purposive sampling criteria (Oppenheim, 1992). Respondents who answered “no” were excluded from further questions via the Google Forms system, which ensured respondent validity. Two hundred and fifty-seven of 389 initial responses were accepted, while the filtering rejected 129 responses. Two respondents were excluded for only using TikTok and lacking courier choice authority, and one was excluded for straight-lining due to the respondent giving the same response to a series of group-scale questions.

Becker *et al.* (2023) and Jais and Nghah (2024) suggested that the partial least squares–structural equation modelling (PLS-SEM) analysis should use G*Power to reach the minimum sample size, which is based on model complexity. With a power of 0.8, medium effect size, and using the two predictors in the research model, the minimum sample size for this model was 68 (Gefen *et al.*, 2011). This study confirmed 257 respondents, which exceeded the requirement. Of the respondents, 76.3% were female, 37% held a degree, 30.7% were 25–31 years old, 31.9% had < 2 years of experience in online selling, 46.3% sold 1-3 products, 47.1% delivered parcels > 3 times weekly, and 31.9% sold food and beverages (Table 1).

4. ANALYSIS AND RESULTS

The respondents' profiles (see Table 1) were described using the Statistical Package for Social Sciences (SPSS). The hypotheses were tested using PLS-SEM with SmartPLS 4 (Ringle *et al.*, 2024). This study aimed to predict the relationships between the constructs in the model. The measurement and structural models were applied following Cemberci *et al.* (2024). The measurement model assessed validity and reliability through convergent and discriminant validity using the PLS algorithm. The structural model tested the hypotheses through bootstrapping.

Table 2 Full collinearity analysis.

Construct	Access Convenience	Conflict Handling	Co-creation	Pleasure	Engagement	Switching Intention
VIF	1.686	2.089	1.618	1.323	1.884	1.093

4.2 Measurement Model

As this study involved reflective measurement, all items must be valid and reliable. Hair *et al.* (2013) determined that cross-loading ≥ 0.5 , composite reliability (CR) ≥ 0.7 , and average variance extracted (AVE) ≥ 0.5 indicate item validity. Table 3 presents the cross-loading,

Table 1 The respondents' profiles.

Variable	Item	Frequency	Percentage
Gender	Male	61	23.7
	Female	196	76.3
Education	Secondary school	41	16.0
	Diploma	78	30.4
	Degree	95	37.0
	Master	32	12.5
	PhD	11	4.3
Age (years)	< 24	39	15.2
	25–31	79	30.7
	32–38	63	24.5
	≥ 39	76	29.6
Experience (years)	< 2	82	31.9
	2.1–4	81	31.5
	4.1–6	26	10.1
Number of products	> 6 years	68	26.5
	1–3	119	46.3
	4–6	57	22.2
	7–9	15	5.8
Delivery frequency per week	> 10	66	25.7
	1	72	28.0
	2	64	24.9
Product type	> 3	121	47.1
	Healthcare	23	8.9
	Cosmetics	28	10.9
	Food and beverages	82	31.9
	Apparel	47	18.3
	Other	77	30.0
Total		257	100.0

4.1 Common Method Bias (CMB)

Collecting data from a single source can cause CMB, where the same respondent provides the predictor and criterion constructs (Podsakoff *et al.*, 2012). The CMB threatens validity and might mislead findings (Podsakoff *et al.*, 2003; Tuan Mansor *et al.*, 2022). Therefore, this study addressed CMB by using procedural and statistical methods. The procedural method used different Likert scales (five-point for exogenous variables and seven-point for endogenous variables). The statistical method involved full collinearity testing, with variance inflation factor (VIF) values < 3.3, indicating minimal CMB (Kock, 2015) (Table 2).

CR, and AVE results, which established the convergent validity of this study.

Discriminant validity was established using the heterotrait-monotrait (HTMT) ratio. Franke and Sarstedt (2019) recommended that the HTMT ratios should be < 0.85. Table 4 illustrates the discriminant validity results, where all the values did not exceed 0.85.

Table 3 Convergent validity

Construct	Item	Loading	CR	AVE
Access Convenience (AC)	AC1	0.781	0.890	0.669
	AC2	0.848		
	AC3	0.804		
	AC4	0.838		
Co-creation (CC)	CC1	0.853	0.931	0.771
	CC2	0.893		
	CC3	0.878		
	CC4	0.888		
Conflict Handling (CH)	CH1	0.880	0.925	0.754
	CH2	0.814		
	CH3	0.876		
	CH4	0.902		
Engagement (Eng)	Eng1	0.803	0.932	0.775
	Eng2	0.904		
	Eng3	0.918		
	Eng4	0.892		
Pleasure (P)	P1	0.891	0.949	0.824
	P2	0.921		
	P3	0.926		
	P4	0.894		
Switching Intention (SI)	SI1	0.957	0.967	0.907
	SI2	0.971		
	SI3	0.929		

Table 4 Discriminant validity (HTMT ratio)

Construct	AC	CC	CH	Eng	P	SI
AC						
CC	0.468					
CH	0.658	0.605				
Eng	0.598	0.540	0.658			
P	0.446	0.193	0.431	0.425		
SI	0.208	0.052	0.194	0.159	0.145	

4.3 Structural Model

After confirming the measurement model's validity and reliability, the structural model must undergo multicollinearity testing to ensure that it is free from multicollinearity issues. The VIF results should be smaller than the threshold value of 5 (Becker *et al.*, 2023). Table 5 indicates that the VIF values were < 5 in all direct relationships, indicating no collinearity issues between the predictor variables. The hypotheses were tested using SmartPLS 4 and by performing a 10,000-subsample bootstrapping analysis (Becker *et al.*, 2023).

Ngah *et al.* (2021b) stated that a hypothesis was supported when the beta value direction was the same as the proposed direction of the hypothesis, $t \geq 1.645$, $p \leq 0.05$, and no zero value for the confidence interval between the 5% lower level (LL) and 95% upper level (UL). Table 5 clarifies the hypothesis testing results for the direct, mediation, and

moderator effect relationships; all hypotheses were supported. Under direct effect relationships, access convenience positively affected pleasure ($\beta = 0.265$, $t = 4.004$, $p \leq 0.000$, LL = 0.149, UL = 0.369), conflict handling positively affected pleasure ($\beta = 0.253$, $t = 3.629$, $p \leq 0.000$, LL = 0.13, UL = 0.36), co-creation positively affected engagement ($\beta = 0.444$, $t = 8.956$, $p \leq 0.000$, LL = 0.357, UL = 0.521), pleasure positively affected engagement ($\beta = 0.322$, $t = 5.522$, $p \leq 0.000$, LL = 0.223, UL = 0.414), and engagement negatively affected switching intention ($\beta = -0.210$, $t = 3.063$, $p \leq 0.001$, LL = -0.320, UL = -0.092). Therefore, H1–H5 were supported.

The magnitude or strength of the relationship between the latent variables was evaluated using the effect size (f^2) for direct effects. Moreover, the effect size is explained by the guidelines recommended by Cohen (1988). An f^2 of 0.02, 0.15, and 0.25 indicates a small, medium, and large effect size, respectively. Table 5 reports the f^2 results, which indicated a small effect size for H1, H2, and H5 compared to H3, and H4 indicated a medium effect size.

This study introduced three mediation effects (two were sequential). Preacher and Hayes (2008) recommended bootstrapping to determine the confidence limits for indirect effects. Based on the two proposed sequential mediations, pleasure and engagement first negatively mediated the relationship between access convenience and switching intention ($\beta = -0.018$, $t = 1.885$, $p \leq 0.030$, LL = -0.037, UL = -0.006) and negatively mediated the relationship between conflict handling and switching intention ($\beta = -0.017$, $t =$

1.735, $p \leq 0.041$, LL = -0.037, UL = -0.005). The results confirmed that pleasure and engagement had a sequential mediation effect on the relationship between access convenience and switching intention and conflict handling and switching intention, thereby supporting H6 and H7. Based on the proposed simple mediation, engagement negatively mediated the relationship between co-creation and switching intention ($\beta = -0.093$, $t = 2.876$, $p \leq 0.002$, LL = -0.148, UL = -0.042), which supported H8.

Table 5 demonstrates that co-creation moderated the relationship between engagement and switching intention ($\beta = 0.161$, $p \leq 0.003$). Slope analysis was developed to aid researchers in understanding the power of the moderating effect (Rahi *et al.*, 2023). This study detailed the moderation effect by using the slope analysis developed by Dawson (2014). Figure 2 demonstrates that a lower co-creation would enhance the negative relationship between engagement and switching intention, which supported H9.

Table 5 Hypotheses testing results

Hypotheses	Relationship	Beta	SE	t-value	p-value	5% LL	95% UL	VIF	f ²
H1	AC → P	0.265	0.066	4.004	0.000	0.149	0.369	1.464	0.061
H2	CH → P	0.253	0.070	3.629	0.000	0.130	0.360	1.464	0.055
H3	CC → Eng	0.444	0.050	8.956	0.000	0.357	0.521	1.034	0.294
H4	P → Eng	0.322	0.058	5.522	0.000	0.223	0.414	1.034	0.155
H5	Eng → SI	-0.210	0.069	3.063	0.001	-0.320	-0.092	1.360	0.035
H6	AC → P → Eng → SI	-0.018	0.010	1.885	0.030	-0.037	-0.006		
H7	CH → P → Eng → SI	-0.017	0.010	1.735	0.041	-0.037	-0.005		
H8	CC → Eng → SI	-0.093	0.032	2.876	0.002	-0.148	-0.042		
H9	CC × Eng → SI	0.161	0.058	2.757	0.003	0.063	0.256		

Note: t-values for a one-tailed test.

AC, access convenience; CC, co-creation; CH, conflict handling; Eng, engagement; P, pleasure; SI, switching intention.

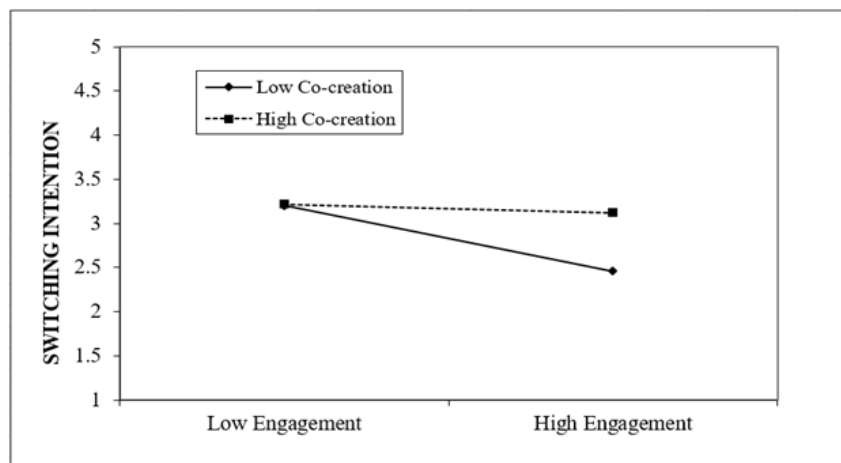


Figure 2 The co-creation moderating effect on the engagement → switching intention relationship

The study also examined the R² to provide a more in-depth analysis. Pleasure, engagement, and switching intention R² values were 0.21, 0.353, and 0.075, respectively. The results indicated that access convenience and conflict handling explained 21% of the variance in pleasure. Pleasure and co-creation explained 35.3% of the variance in engagement, and access convenience, conflict handling, co-creation, pleasure, and engagement explained 7.5% of the variance in switching intention.

Shmueli *et al.* (2019) stated that PLSpredict could be used to determine the predictive power of a model, which was more optimal than blindfolding procedures. The

PLSpredict model demonstrates strong predictive power when the difference between the partial least squares-root mean square error (PLS-RMSE) and linear modelling-root mean square error (LM-RMSE) for all items shows negative values. The predictive power is moderate when half of the items show negative values and low when a minority show negative values. Nonetheless, the predictive power is considered unconfirmed when all items show positive values. Furthermore, the Q² value must also demonstrate that all values are positive. The analysis determined that the predictive power of switching intention was not confirmed when all items were positive (Table 6).

Table 6 PLSpredict results

Item	Q ² _predict	PLS-RMSE	LM-RMSE	PLS-LM	Decision
SI1	0.005	1.816	1.790	0.026	Not confirmed
SI2	0.007	1.724	1.701	0.023	
SI3	0.016	1.675	1.675	0.000	

SI, switching intention

5. DISCUSSION AND IMPLICATIONS

5.1 Discussion of Results

This study examined the direct effects of access convenience and conflict handling on pleasure, co-creation and pleasure on engagement, and engagement on switching intention. Furthermore, pleasure and engagement were investigated as single and sequential mediators, and co-creation was examined as a moderator between engagement and switching intention. Access convenience and conflict handling positively affected pleasure, which aligned with Vo and Van Nguyen (2022) and Ngah *et al.* (2023) past studies. The results highlighted the significance of access convenience and conflict handling in last-mile delivery (LMD), especially when online sellers depend on couriers to deliver their products to online shoppers. This is particularly important when couriers must offer easy access to parking spaces for online sellers to drop off their parcels, especially during weekends. Despite online sellers also being part-time sellers, it is important for them to drop off their parcels at weekends. Couriers should also provide excellent after-sales service to improve conflict handling service, address zero complaints, meet customers' needs, and prevent them from switching to other couriers. All these amenities contributed to the online sellers' satisfaction and pleasure.

Additionally, co-creation and pleasure positively influenced engagement, which was supported by Cheung *et al.* (2021) and Banik (2021) studies. Co-creation enhances customer engagement, reducing the likelihood of customer switching. The findings highlight that pleasure from online sellers' experience leads to three times stronger customer engagement with the firm (de Oliveira Santini *et al.*, 2020). Consequently, a pleasant customer experience promotes stronger engagement and creates customer loyalty. Furthermore, online sellers who engaged with their current couriers' services would have less intention to switch to other couriers, which agrees with Menidjel *et al.* (2023) and Tiamiyu *et al.* (2020). Engaged online sellers are less likely to switch couriers as they appreciate their relationship with the existing service.

The sequential mediation effect results demonstrated that pleasure and engagement negatively and sequentially mediate the connection between access convenience and switching intention. The results indicated that when couriers offer convenient access, such as drop-off service points, flexible pickup and delivery times, easy navigation through mobile apps or websites, and responsive customer support, online sellers experience pleasure. This pleasure enhances their engagement with the service. As online sellers become more engaged, they cultivate a stronger commitment and attachment to the service, reducing the inclination to switch to other services. The second sequential mediation effect results demonstrated that conflict handling and switching intention were negatively and sequentially mediated by pleasure and engagement. The outcomes highlight that when couriers resolve complaints quickly and fairly, online sellers tend to feel pleased or satisfied. An increased pleasure leads to higher engagement, which means lower switching intention. Furthermore, the results revealed that engagement negatively mediates the

relationship between co-creation and switching intention. When online sellers participate in co-creating the courier service, they feel more valued and invested, which increases their engagement with the brand. Furthermore, engaged online sellers are less likely to switch to competitors. Thus, couriers should focus on improving their access convenience, conflict handling methods and implement co-creation strategies to make sure that online sellers, shoppers or buyers feel pleased and engaged with their services.

While the other mediation analyses supported H6–H8, the hypotheses also denoted no effect size, which implied that the mediation had no significant effect. Hence, the results did not reveal the relation of pleasure and engagement as mediators between access convenience and switching intention and between conflict handling and switching intention. The results also did not demonstrate the relation of engagement as a single mediator between co-creation and switching intention. Thus, couriers should also consider these results.

Regarding the moderating effect, the study revealed that co-creation moderates the relationship between engagement and switching intention. Dawson's plot demonstrates that low co-creation significantly increases the likelihood of online sellers switching couriers. Therefore, couriers must enhance collaboration with sellers to prevent switching. Self-collection challenges, delivery app issues, and poor cooperation between couriers and sellers drive switching behaviour, emphasising the need to avoid low co-creation.

5.2 Theoretical Contributions

The study has provided several significant contributions to the existing research. The study first introduced a newly expanded SOR model in LMD studies. Fewer studies have applied SOR theory to the context of switching intention. The SOR theory explained customers' emotions and behaviours regarding service. It introduced access convenience, conflict handling, and co-creation as stimuli, pleasure and engagement as organisms, and intention to switch as the response. In the logistics industry, the findings indicate factors influencing online sellers to switch couriers and emphasise the importance of access convenience, conflict handling, and co-creation. These elements enhance online sellers' pleasure, engagement and reduce their intention to switch.

This study also introduced engagement as a mediator between co-creation and switching intention. The results revealed that collaboration between sellers and couriers created new customer value for the companies, which increased their engagement and prevented them from switching to other couriers. Additionally, this study examined pleasure and engagement as sequential mediators between access convenience and switching intention and between conflict handling and switching intention. The findings address the gap in the literature regarding sequential mediation and contribute novel insights to social science studies.

The third contribution of this study is discovering co-creation as a moderator between engagement and switching intention, which presented enhanced explanations and prediction power for the new model. Unlike most studies focusing on buyers, this study predicted switching intention

from the online sellers' perspectives. This study also provided valuable insights into the field of switching intention, particularly within LMD studies, and encourages researchers to explore new mediators and moderators.

5.3 Practical Implications

The results indicated that courier company managers should improve services and prevent online sellers from switching. Couriers should innovate and improve services to ensure customer satisfaction and competitiveness, and address online sellers' complaints and expectations. Strong collaboration between couriers and sellers is important, as sellers may set high standards for couriers to protect their reputations and brands (Izzah *et al.*, 2021). Inefficient couriers could lead to dissatisfied shoppers, which could negatively affect sales (Rajendran *et al.*, 2022). Couriers must perceive online sellers' feedback seriously and establish conflict resolution procedures. Additionally, the authors suggested that government agencies, such as the Malaysian Communications and Multimedia Commission (MCMC), should develop policies to ensure high service standards and online seller protection to promote a secure and competitive market. Furthermore, improved courier services might also reduce complaints to the MCMC.

6. CONCLUSION

In conclusion, the results revealed that access convenience and conflict handling are crucial factors for couriers in ensuring customer pleasure, enhancing customer engagement, and avoiding switching intention among online sellers. The results also revealed that co-creation was a critical factor that could enhance customer engagement and prevent online sellers from switching couriers. All five direct hypotheses H1-H5 were supported, and the single and sequential mediation results demonstrated that H6-H8 were supported. Lastly, low co-creation affected online sellers' switching intention, which supported H9. Additionally, the findings of this study also fill a gap in social science research regarding sequential mediation, highlighting its novelty.

This study also emphasises the long-term social impact of e-commerce by improving courier reliability and enhancing delivery services. Effective delivery services encourage consumers to shop online confidently, which fosters economic growth and creates new jobs for Malaysians in the e-commerce sector. Additionally, a more efficient logistics system can help reduce the carbon footprint associated with transportation by optimising delivery routes, minimising fuel consumption, and promoting the use of environmentally friendly vehicles. These improvements align with environmental, social, and governance (ESG) goals to develop a more sustainable economy. Therefore, future research should focus on enhancing service delivery by exploring new technologies and tools to improve the quality of service.

The study has several limitations, as it only examined access convenience, conflict handling, co-creation, pleasure, and engagement in relation to switching intentions. Future research should investigate additional factors (stimuli) and explore different mediating variables (organisms). Furthermore, this study only introduced two organisms and focused exclusively on Malaysia. Therefore, it is important to replicate this research in other countries to compare results across different contexts.

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