Implementing PPM framework to customer’s switching behaviour in dual-channel service supply chain

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Abstract. Dual-Channel Supply Chain (in short DCSC) is a business structure that integrates offline channel and online channels in distributing their products. In DCSC, a consumer may switch easily from one channel to another which can make a conflict between both channels because they have the same potential consumer. This study aims to examine the factors that cause consumers to switch shopping channels in the DCSC structure. Push-Pull-Mooring (PPM) is applied to investigate consumer channel switching behaviour that is implemented in a service company. Push variable includes information searching behaviour, perceived service quality, satisfaction, and perceived price. The pull variable includes switching cost, attitude toward switching, subjective norm. Additionally, mooring variable comprises of alternative attractiveness and responsiveness. The findings indicate that all three variables have a significant effect on switching intention. However, neither of mooring factor on the relationship between push and switching intention nor between pull and switching intention show moderating effects. Partial Least Square-Structural Equation Modelling (PLS-SEM) is applied to analyse survey data from 250 respondents. The result of the interrelationship among variables could be potentially applied in determining operational and tactical strategies to anticipate the volatilities in consumer behaviours.

1. Introduction
In recent years, internet technology has become more popular and encouraged the growth of e-commerce. Recognizing this situation, led the company redesign its sales strategies and supply chain distribution to stay competitive. Nowadays retailers sell their products through the indirect channel (offline store), direct channel (online store) or mix channel (both online and offline store) which is called dual-channel [1]. Products that are usually distributed through the dual-channel structure are books, personal computers, music, films, electronic equipment, and clothing. Some international companies that have implemented DCSC first are IBM, Dell, Nike, Adidas, Sony, Cisco, Estee Lauder, Lego and several others [2]. The main reasons for establishing the DCSC structure are to reach more consumers [3] and increasing the company's competitive advantage [1]; [4]. The combination of offline channels and online channels (dual-channel) is predicted to be productive and complementary approaches [5]. The effect of sales through the online channel is expected to grow 6% annually between 2015 to 2020 [6]. DCSC can potentially increase sales on average of 20% and provides an opportunity for companies to reach new markets by utilizing the internet. The potential also opens opportunities for researchers to contribute to developing the DCSC concept [7].

Even though these two types of channels simultaneously meet the demands of customers who have quite sensitive characters switching channels in making product purchases or services offered [7], but in the other hand combination of these two channels leads to the channels conflict in the dual-channel structures. It is because these two channels have the same potential consumer [8]. Chen, Zhang, and Sun
said that the development of the online channel can reduce market share and profit of offline channels. E-commerce has changed buying and selling consumption patterns. One of the purchasing phenomena is finding products on one channel (online channel) and then buying on another channel (offline store) or vice versa. Offline channel captures consumer who cannot access the internet or who prefer to buy products through offline channel, while online channel attracts a consumer to buy after viewing the products or services from the website to save transportation cost and time. Considering the potential negative impact of consumer switching behaviour it is important to investigate factors that might motivate a consumer to switch.

Previous studies are focuses on pricing strategy using game theory method to avoid compete channels, such as [4], [8], [9], [12], [13], [14], [15], [16], [17], including how to manage channels with sales return to get optimal profitability [18]; [19]. However, the study of consumer switching behaviour in context dual channel service supply chain is still rare. This study aims to investigate consumer switching behaviour, especially focuses on the reason why consumer switching from offline channel to online channel in dual channel service supply chain. Our study also includes push, pull, mooring framework to understand consumer shifting decision from one service provider to another. Push effect is a negative factor that motivates people away from the origin, while the pull effect is a positive factor that motivates people to the destination. Additionally, the mooring effect is a personal and social factor that facilitates or inhibits people to switch [20]. Finally, this study attempts to provide theoretical and managerial insight for members of dual channel. First, we discuss consumer behaviour in the context of dual-channel service supply chain. Second, we discuss factors that influence a consumer to switch from one channel to another not only characteristic channel factors but also personal and social factors.

2. Literature Review

2.1 Dual-Channel Supply Chain

The dual-channel supply chain is a distribution structure combination between an offline channel and an online channel [2]. Offline channel or traditional channel can attract consumers by evaluating products (touch, taste, smell and often sound) and returning it even after mistaken purchase [21]. While the online channel offers the possibility for a firm to reach the market and get better profitability [9]. Figure 1 shows the way a firm deliver their product or services. The traditional structure, (also known as an offline channel) is given on the left-hand side of figure 1. In this part, there are 1 supplier and 1 store to fulfil customer demand. In contrast, with the rapid growth of the internet, a firm can sell their products or services using direct channels (also called online channels). This concept is represented on the right-hand side of figure 1. Finally, the middle part shows the way to combine offline channels and online channels in reality.
2.2 Consumer Switching Behaviour

Consumer behaviour is a behaviour shown by end consumers, namely individuals, groups or organizations in the form of behavioural selection, buying and using goods or services to meet the needs and desires of consumers [22]. Switching is a person’s tendency or intention to move or switch from one method to another [23]. Switching behaviour can occur because of the desire of consumers to meet their needs [20]. In the context of the dual-channel supply chain, a consumer can switch easily from one channel to another. It can confuse each channel on how many and how much product/service to be sold. Consumers also show different attitudes and choices for each shopping channel according to their preference. For example, Lai and Wang [24] found that habit is a dominant antecedent that inhibits consumer switching behaviour. Consumer prefers to see the doctor in hospital rather than using health cloud services because of generally elderly lack of internet and application knowledge. Li [25] shows that switching between membership cards and mobile applications is strongly influenced by aesthetic design, capability, economic benefits, convenient transaction, and gamification.

2.3 The Push-Pull-Mooring (PPM) Framework

The push-pull-mooring (PPM) framework is a dominant paradigm in human migration literature that describes why people migrate from one place to another. There is a correspondence between human migration and consumer switching behaviour. PPM is a unifying framework of consumer switching behaviour from one service provider to another [20]. Migration describes the flow of people from one place to another, while switching describes the flow of consumer movement from one service provider to another [20]. The PPM framework consists of three factors namely push factor, pull factor and mooring factor. A push factor is a negative characteristic at origin that motivates human to migrate and pull factor is a positive characteristic at the destination that attracts people to move to the destination. Although the push and pull effects offer the model that describes human migration, this model is not comprehensive. There is a factor that influences people to migrate. Thus, researchers have added mooring factors as an additional factor. It can recognize that human migration depends on their personal and social context [20].
3. Research Model and Hypotheses Development

The purpose of this study is to explore the push, pull, and mooring factors that influence users to switch from offline channel to online channel in context dual-channel service supply chain. Based on push pull mooring factors, we develop research model which is shown in figure 2. The model is developed based on reflective-formative specification of PPM constructs [26].

![Figure 2. Research Model](image-url)
3.1 Push factors

Push factor as a negative factor that motivates people to leave the origin [20]. While according to [27] defined push as the perception of the characteristics of the place of origin that influence migratory decisions. Push factors or push effects are considered to be an effect caused by a combination of negative factors that exist at the origin [26]. Based on [20] state that variables that including into push factors such as satisfaction, quality, and price perception. Consumers will be encouraged to switch because of low satisfaction and quality and high prices. Meanwhile [11] point out that seeking information using a smartphone with internet connected would provide convenient for consumers to purchase at a physical store. The quality of information is also considered as a factor that drives consumers to switch. The quality of information regarding the characteristics of information produced such as timeliness, conversion, format and amount of information [28]. Therefore, information seeking behaviour is one of the drivers for consumers to switch services. The ease of finding information and the more information available regarding features, prices and types of products will encourage consumers to switch services. Thus, we hypothesize:

H1: Push effects (high information searching behaviour, low perceived service quality, low satisfaction, and high perceived price) related with dual channel have positive effects on switching intention.

3.2 Pull factors

Pull factor defined as a positive factor in alternative services that attract consumers to switch to alternative services. In marketing research, the pull effect is a characteristic of alternative services that have a positive effect on switching intentions [10]. Whereas according to [26] pull factor is a combination of positive attributes on alternative services that cause or attract consumers to switch to alternative services. Based on [20] variables including the pull factor are alternative attractiveness. Alternative attractiveness defined as a positive characteristic and has a positive relationship to switching intention [20]. The higher the alternative attractiveness of service origin, the more likely consumers will intend to switch to alternative services. Whereas, [24] state that the responsiveness of competitor services is one of the keys that attracts consumers to switch and can be shown through the speed of response from the request submitted. Through online channels, a consumer can buy a ticket wherever and whenever they want. Therefore, we consider alternative attractiveness and responsiveness as a potential attribute that attracts consumers to switch to online channels. Thus, we hypothesize:

H2: Pull (high alternative attractiveness and responsiveness) related to dual-channel supply chain have positive effects on switching intention

3.3 Mooring factors

Mooring factors are specific variables that act to facilitate or inhibit the migrating decision [20]. The mooring effect is a combination of negative factors from personal and social characteristics that also influence switching intention [26]. Based on [20], variables included in the mooring factor are switching costs, subjective norms (social influence), and attitude toward switching. Habit is the dominant predictor that prevented consumers from switching [24]. Habit is an automatic behaviour, looks natural and without thinking. They found out that the elderly who have the habit of visiting doctors directly tend to be hesitant to use health cloud services. Concerning the research conducted by the authors, habit factors tend to inhibit consumers from switching. For example, consumers who are accustomed to buying watching tickets through cinema counters may tend to be reluctant to switch using applications when making ticket purchases. Thus, we hypothesize:

H3: (switching cost, subjective norm, attitude toward switching and habit) related to the dual channel have positive effects on switching intention.

3.4 Moderating effects
In previous literature on switching behaviour, mooring variables act as moderators. For example, although push and pull factors are strong, consumers may not switch because of mooring factor. Therefore, mooring factors can moderate the relationship between push and switching intention and between pull and switching intentions [20]. Thus, we hypothesize:

H4: Mooring effects moderate the relationship between push and switching intention

H5: Mooring effects moderate the relationship between pull and switching intention

4. Research methodology

4.1 Analysis strategy

This present study was performing a partial least regression analysis method (PLS) to analyse data. According to Hair et al. (2017) PLS has been considered as the recommended method for estimate data that have abnormal distribution and models with formative indicators. This study using PLS because all the three variables (push, pull, mooring) as a second-order construct with formative models in which each of them has the first-order construct as indicators with reflective models. Push variable has four indicators including information searching behaviour, low perceived service quality, low satisfaction, and high perceived price. The mooring variable has four indicators including switching cost, attitude toward switching, subjective norm, and habit. Additionally, the pull variable has two indicators alternative attractiveness and responsiveness.

4.2 Data collection

We conducted an offline survey from April till May and got 270 questionnaires but only 250 questionnaires were used as data analysis. We excluded 9 respondents who never use M-Tix, 6 respondents had straight line responses and 5 respondents had responses below 50%. Respondents are a student from graduate and master program who considered used to using a smartphone application to buy tickets including movie tickets. Data that we analyse are from respondents who had at least one buying experience with both locket cinema and M-Tix application. The final sample is shown in Table 1.

| Table 1: Demographics of respondents (n=250) |
|---------------------------------------------|
| Item            | Demographics | Sample | Percentage |
|-----------------|--------------|--------|------------|
| Gender          | Male         | 116    | 46.4       |
|                 | Female       | 134    | 53.6       |
| Age             | 17-20        | 162    | 64.8       |
|                 | 21-25        | 76     | 30.4       |
|                 | 26-30        | 10     | 4.0        |
|                 | 31-35        | 2      | 0.8        |
| Education       | Graduate program | 180  | 72.0       |
|                 | Master program | 70    | 28.0       |

4.3 Measurement model

We applied partial least squares-structural equation modelling (PLSs-SEM) to assess the measurement and structural model. Furthermore, PLS allows latent constructs to be model as formative or reflective indicators [29] which were necessary for our model. Considering Cinema 21 is the biggest cinema and the application of this firm is the most popular in Indonesia based on data user download from the play store we choose it as our research object. Based on push-pull mooring factors, we developed the research model shown in figure 2. The model and hypotheses were developed based on the reflective-formative specification of PPM constructs [26]. Information searching behaviour, perceived service quality, satisfaction, perceived price, switching cost, attitude toward switching, subjective norm, habit,
alternative attractiveness and responsiveness were conceptualized as reflective first order constructs. Whereas push, pull, and mooring were conceptualized as formative second order constructs. We use six-point Likert scales, ranging from strongly disagree (1) to strongly agree (6). We use a total of 52 items to measure the push, pull, and mooring variable. All items are adapted from previous study. Two items we use to measure information searching behavior came from Chang et al., (2017); to measure perceived service quality one item came from Bansal et al., (2005) and two items came from Chang et al., (2017); two items to measure satisfaction came from Bansal et al., (2005); two items to measure perceived price came from Bansal et al., (2005); two items to measure switching cost came from Bansal et al., (2005); three items to measure attitude toward switching came from Bansal et al., (2005); and two items to measure subjective norm came from Lai & Wang (2015); three items to measure alternative attractiveness came from Bansal et al., (2005); and two items to measure responsiveness came from Lai & Wang (2015). Finally, we use three items to measure switching costs came from Li (2018).

5. Analysis and Results
5.1 Measurement Model Evaluation
Measurement evaluation was to examine the scale reliability and validity for each factor. We computed Cronbach's alpha and composite reliability which threshold range from 0.70 to 0.95 and Average variance extracted (AVE) with a cut of point 0.5 [30]. Table 2 shows that the minimum value for Cronbach's alpha, composite reliability (CR) and AVE were 0.839, 0.919, 0.782. Each value was higher than the threshold value, suggesting that all construct was reliable. We also test the convergent validity of the model with a threshold above 0.7. The result showed that all item has outer loading above 0.7, suggesting that all construct was valid.

| Construct | Cronbach's Alpha | CR  | AVE  |
|-----------|------------------|-----|------|
| AA        | 0.871            | 0.921 | 0.795 |
| ATS       | 0.884            | 0.928 | 0.812 |
| HB        | 0.861            | 0.935 | 0.878 |
| ISB       | 0.866            | 0.937 | 0.881 |
| PP        | 0.839            | 0.925 | 0.860 |
| PSQ       | 0.867            | 0.919 | 0.792 |
| RES       | 0.863            | 0.936 | 0.879 |
| SA        | 0.849            | 0.930 | 0.869 |
| SC        | 0.855            | 0.931 | 0.871 |
| SI        | 0.880            | 0.926 | 0.806 |
| SN        | 0.848            | 0.929 | 0.868 |

Notes: CR: composite realibity, AVE; average variance extracted; AA: alternative attractiveness, ATS: attitude toward switching, HB: habit, ISB: information searching behavior, PP: perceived price, PSQ: perceived service quality, RES: responsiveness, SA: satisfaction, SC: switching cost, SI: switching intention, SN: subjective norm

To examine discriminant validity, we conducted two criteria are The Fornell Larcker Criterion (Table 3) and Heterotrait-monotrait ratio (HTMT) (Table 4). The threshold for these two criteria are the correlation variable must be higher than the correlation with other variable and the correlation of each construct should be higher than the value under the predefined threshold 0.90 indicated that factors have adequate discriminant validity. Table 3 showed that the correlation among variables was higher than the
correlation with another variable all. Whereas Table 4 showed that all correlation values under 0.9. This result indicates that the model has good discriminant validity.

For the formative construct, we tested the significance of outer weight and multicollinearity among the item measurement model by using the variance inflation factor (VIF) which threshold value under 5\[30\]. Furthermore, a significance level of at least 0.05 for each subconstruct means that the subconstruct was forming a construct\[30\].

Table 3: The Fornell Larcker Criterion

| Variable | AA | ATS | HB | ISB | PP | PSQ | RES | SA | SC | SI | SN |
|----------|----|-----|----|-----|----|-----|-----|----|----|----|----|
| AA       | 0.892 |    |    |    |    |    |    |    |    |    |    |
| ATS      | -0.048 | 0.901 |    |    |    |    |    |    |    |    |    |
| HB       | -0.291 | 0.439 | 0.937 |    |    |    |    |    |    |    |    |
| ISB      | 0.113 | 0.085 | 0.120 | 0.939 |    |    |    |    |    |    |    |
| PP       | 0.309 | 0.150 | 0.042 | 0.193 | 0.928 |    |    |    |    |    |    |
| PSQ      | 0.299 | 0.335 | -0.054 | 0.194 | 0.290 | 0.890 |    |    |    |    |    |
| RES      | 0.775 | 0.020 | -0.159 | 0.072 | 0.315 | 0.240 | 0.938 |    |    |    |    |
| SA       | 0.367 | 0.211 | -0.138 | 0.126 | 0.196 | 0.583 | 0.273 | 0.932 |    |    |    |
| SC       | 0.359 | 0.136 | -0.117 | 0.064 | 0.202 | 0.307 | 0.299 | 0.299 | 0.933 |    |    |
| SI       | 0.601 | -0.146 | -0.465 | 0.178 | 0.253 | 0.246 | 0.451 | 0.332 | 0.325 | 0.898 |    |
| SN       | -0.088 | 0.637 | 0.335 | 0.034 | 0.213 | 0.350 | -0.038 | 0.205 | 0.060 | -0.136 | 0.932 |

Notes: The Fornell-Larcker Criteria value were in bold;
AA: alternative attractiveness, ATS: attitude toward switching, HB: habit, ISB: information searching behavior, PP: perceived price, PSQ: perceived service quality, RES: responsiveness, SA: satisfaction, SC: switching cost, SI: switching intention, SN: subjective norm

Table 4: Heterotrait Monotrait

| Variable | AA | ATS | HB | ISB | PP | PSQ | RES | SA | SC | SI | SN |
|----------|----|-----|----|-----|----|-----|-----|----|----|----|----|
| AA       |    |    |    |    |    |    |    |    |    |    |    |
| ATS      | 0.073 |    |    |    |    |    |    |    |    |    |    |
| HB       | 0.337 | 0.503 |    |    |    |    |    |    |    |    |    |
| ISB      | 0.134 | 0.097 | 0.138 |    |    |    |    |    |    |    |    |
| PP       | 0.364 | 0.176 | 0.081 | 0.222 |    |    |    |    |    |    |    |
| PSQ      | 0.345 | 0.381 | 0.081 | 0.221 | 0.338 |    |    |    |    |    |    |
| RES      | 0.892 | 0.074 | 0.184 | 0.086 | 0.374 | 0.279 |    |    |    |    |    |
| SA       | 0.428 | 0.244 | 0.162 | 0.146 | 0.228 | 0.679 | 0.319 |    |    |    |    |
| SC       | 0.418 | 0.156 | 0.139 | 0.08 | 0.243 | 0.36 | 0.346 | 0.356 |    |    |    |
| SI       | 0.688 | 0.162 | 0.532 | 0.203 | 0.294 | 0.28 | 0.518 | 0.383 | 0.285 |    |    |
| SN       | 0.107 | 0.734 | 0.39 | 0.066 | 0.253 | 0.408 | 0.046 | 0.241 | 0.071 | 0.153 |    |

Notes: HTMT: heterotrait-monotrait
AA: alternative attractiveness, ATS: attitude toward switching, HB: habit, ISB: information searching behaviour, PP: perceived price, PSQ: perceived service quality, RES: responsiveness, SA: satisfaction, SC: switching cost, SI: switching intention, SN: subjective norm

5.2 Structural Model Evaluation

For the structural model, we examined path coefficient and R-square which represent the explained variance of endogenous variables \[30\]. The result showed that the variance explained 45.9\% of switching intention. Push, pull, and mooring was model as a second-order construct and the model was formative. In fig 2 we described the results of our tests of the structural model. As we expected, all of the three constructs were a significant effect on switching intention. Push factors (\(\beta = 0.215, t = 4.506\)) and pull (\(\beta = 0.365, t = 5.737\)) were positively related on switching intention, while mooring (\(\beta = -0.362, t = 4.506\)).
t = 5.171) was negatively related on switching intention. These findings support for H1-H3. We also examined the interaction effects, the results showed that mooring can't moderate the relationship between push and switching intention (β = 0.032, t = 0.674) and between pull and switching intention (β = 0.026, t = 0.530). That is we found H4 and H5 were not supported.

Figure 3. Result of PLS analysis, p<0.05
5.2.1 Push and Switching Intention. Based on the results of data processing, we found that push factors significantly influence switching intention, however, the push factor is the weakest predictor of switching intention. Push factor consists of searching information behavior, satisfaction, perceived service quality, and perceived price. Consumers will tend to switch to using online shopping channels if they tend to always look for information related to services, the feeling of dissatisfaction, perceived low service quality, and prices more expensive on offline channels. The variable that has the greatest weight as a push factor is low satisfaction. Feelings of dissatisfaction experienced by consumers can occur because buying tickets through offline channels requires to visit the cinema counters directly and at certain conditions, consumers must queue to get tickets.

5.2.2 Pull and Switching Intention. Based on the results of data processing, it was found that the pull factor significantly affected switching intention and was the second strongest predictor to influence switching intention. Based on the results of data processing, it was found that the pull factor had a positive effect on switching intention. The pull factor consists of alternative attractiveness and responsiveness. Consumers will tend to have the desire to switch to an offline channel if the attractiveness and responsiveness of the offline channel are high. Consumers are interested in switching to offline channels because consumers feel that offline channels have a favorable policy. The benefits that consumers can enjoy can be in the form of getting a shopping promo as a result of offline channel collaboration with certain companies to provide buy 1 get 1 to consumers on certain days.

5.2.3 Mooring and Switching Intention. Based on the results of data processing, it was found that the mooring factor had a significant negative effect on switching intention and was the strongest predictor of influencing switching intention. The mooring factor will prevent consumers from switching to using offline channels. The habit has the greatest weight in preventing consumers from switching to using offline channels. Other results from this study indicate that mooring can moderate the relationship between push and switching intention but cannot moderate the relationship between pull and switching intention. The stronger the mooring factor, the relationship between push and intention switching will be weaker. This means that the stronger the mooring factor, consumers may not switch even though the online channel push factor is high.

6. Managerial Implication
In this paper, we have discussed consumer switching behavior in context Dual-Channel Supply Chain. The analytical derivation of this paper reveals important results. The habit became the biggest supporting of the mooring variable. It means that the habit of a consumer on the offline channel was strong. It can challenge each managerial to provide a firm’s strategy. Habit can be showed that consumer has a good loyalty on the channel. A firm can be doing nothing to attract consumers to use a particular channel. But on the other hand, when the manager wants to introduce a new strategy, the consumer may tend to reject that new strategy. The most dominant factor affecting switching intention from offline to online switching models is a habit. Consumers who are accustomed to buying tickets through offline channels will automatically do the same for their next purchase (repurchase). This finding indicates that although online channels provide convenience such as purchasing tickets without queuing, it can be done anywhere and anytime, but consumers remain reluctant to switch from offline channels to online channels. This result is similar to previous studies which stated that habit has a significant impact on switching intention by [31].

Habit occurs because when consumers are accustomed to using certain service providers, they tend not to be careful about comparing advantages among various alternatives but only follow existing previous service providers. Habit is sometimes analogous to inertia, which is behavior that shows behavior to continue to use a certain system that was used previously even though they are aware that the system may not be the best, this is because they tend to avoid pressure from change [32]. Tickets purchasing through M-Tix may provide pressure and inconvenience to consumers who are accustomed to buying through the cinema locket. For example, purchasing online tickets requires consumers to register where consumers enter personal information data. Another Pressure can come from online
transaction processing. Consumers who are not accustomed to providing personal information and online transactions may cause certain inconveniences and pressure so they tend to prefer to use offline channels instead of switching to use online channels.

7. Limitation
We use a self-selected sampling approach to collect data; that is, we asked a student from two departments of a university who were knowledgeable about M-Tix application Cinema 21 using offline survey, thus selecting respondents that we felt were most representative of the population. Only respondents who were aged range from 17 to 35 being our respondents, we consider that they know and have experience in using ticketing applications. It means that discretion is strongly advised when generalizing the research result in other areas of dual channel. Therefore, the above-mentioned limitations, the research result can still reflect most scenarios. Although we carefully designed our study, improvements can be made for future research. First, an online survey can be taken into consideration the generalization of the sampling area. Second, future research can be taken into consideration the design interface of M-Tix application as a factor that can influence consumer using this application.

8. Conclusion
The grow of internet and e-commerce has the company to redesign its channel structure from single channel to dual channel. This study investigates consumer switching behaviour from offline channels to online channels in context dual-channel service supply chain using push, pull, mooring (PPM) frameworks. This study shows that information searching behaviour, low perceived service quality, low satisfaction, and high perceived price motivate a consumer to switch the existing channel. If an alternative channel can provide alternative attractiveness and responsiveness than the existing channel, a consumer will switch to alternative ones. Furthermore, personal and social factors can inhibit consumer to switch. A consumer may not switch to alternative channels if perceived switching cost is high, attitude toward switching and the subjective norm is less favourable and consumers are highly habitual. Therefore, providing more benefits can be a useful strategy to attract consumers using a particular channel. Finally, understanding consumer switching behaviour in the context of dual-channel service supply chain structures can be crucial for a manager to maintain the relationship with the consumer and to develop their marketing strategy.

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**Appendix A : Scale Measure**

| Construct                  | Measure                                                                 |
|----------------------------|-------------------------------------------------------------------------|
| Switching Intention        | I consider online channel as my main transaction tool                   |
|                            | I am determined to switch to online channel                             |
|                            | I consider transacting more using online channel than through offline channel |
| Information searching      | Before making a purchase, I will look for information (prices and promotions) for the same type of product on online channel |
| behaviour                  | Before making a purchase, I will look for information (prices and promotions) for different types of products on online channel |
| Perceived service quality  | I feel offline channel provide services of low quality                  |
|                            | Offline channel pays less attention to consumers                       |
|                            | Offline channel does not directly address consumer problems            |
| Satisfaction               | I feel less satisfied buying through offline channel                    |
|                            | I feel less happy buying through offline channel                       |
| Perceived price            | I pay for offline channel at an expensive price compared to buying through online channel |
|                            | The cost of offline services is more expensive than online channel      |
| Switching cost             | I will spend more time switching from offline channel to online channel |
|                            | I will spend more effort switching from offline channel to online channel |
| Attitude toward switching  | I feel switching from offline channel to online channel is a bad idea   |
|                            | I feel that switching from offline channel to online channels is a wise decision |
| Subjective norm            | I feel switching from an offline channel to an online channel is less convenient |
|                            | People close to me don't agree to switch from offline channel to online channel |
|                            | People close to me do not recommend switching from an offline channel to an online channel |
| Habit                      | Naturally I chose to transact via offline channels rather than using online channels |
|                            | I automatically chose to buy via an offline channel rather than using an online channel |
| Alternative attractiveness  | I will feel more satisfied using online channels                        |
|                            | Overall, the policies of online channels are more profitable than offline channels |
| Responsiveness             | I feel online channel respond to requests on time                       |
|                            | I feel online channel respond to requests quickly                       |