

Measuring the Effects of Online-To-Offline Marketing

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Introduction

In recent years, Due to the rising of electronic commerce and mobile commerce, customers tend to adopt multiple channels while searching and purchasing productions or services. Nielsen (2014) reported the 96% of Taiwan's web user went online shopping, and searching and purchasing products through mobile devices (smart phones and tablets) increased from 24% to 32%. Customers' enhanced their cross channel shopping behavior by applying more functions through mobile devices. According to a Taylor Nelson Sofres' (2013) survey, 24% of people use a smartphone or tablet to search for information on a product at home, 21% use mobile devices to compare prices in store, 16% view product information, 16% use coupons, and 15% use mobile commerce to purchase products. ComScore (2013) investigated 3,000 customers, 44% reported that if stores provided online ordering and in-store pickup, then they would prefer to patronize these stores. Stores that adopted the online-to-offline (O2O) marketing model would attract customers to visit the store and purchase products. Therefore, understanding the O2O marketing model has become increasingly crucial and important. This study aimed to develop a model to measure how to efficiently mix the marketing resources on offline and online channels, in order to create a successful O2O marketing strategy. Our research purposes include: (1) To build the measured variables to identify how to adopt O2O marketing (2) To use explore factor analysis to extract the key factors of O2O marketing adoption (3) To explore searching and purchasing behavior on offline and online channels. (4) To provide the conclusion and managerial implications for improving O2O marketing strategies

Literature Review

Online-to-offline(O2O) Marketing

The online-to-offline (O2O) marketing model is also known as the online and offline integration model. Alex Rampell, the chief executive officer and founder of TrialPay, stated that the key to O2O is that it locates customers online and brings them into real-world stores (TechCrunch, 2010). The model is a combination of a payment model and foot traffic generator for merchants (as well as a "discovery" mechanism for customers) that enables offline purchase. For example, an online channel cannot provide an actual restaurant experience and is used only to trade goods unilaterally. By contrast, an offline channel cannot provide people with information on store location or promotions. Therefore, a complementary model that enables the industry to attract additional customers to the physical store is necessary. The Online Economy

(2012) indicated that because of the increase in social networking sites and location-based services, customers currently obtain preferential information on products through both channels and then purchase the products in a physical store (The Online Economy, 2012).

Conway (2011) surveyed currently available methods for four O2O models: the traditional online store, location-based services, social commerce, and group purchasing. In addition, the O2O marketing model has become a critical topic in channel integration (Business Inside, 2011). Customers will consider various factors to adopt the most appropriate channel to execute their transactions. For instance, if customers seek to search for information quickly, they would select an online store or use a mobile device to search for information. Conversely, if customers want to try on or touch a product, they would visit a physical store to locate a product. Therefore, we believe that understanding the customer factor of search and purchase and the subsequent adoption behavior are crucial. Moreover, marketers need to mix their marketing resources on offline and online/mobile channels to effectively and efficiently catch their targeted customers.

Online-To-Offline Adoption Factors For Searching Process

Information Availability. Verhoef et al. (2007) considered the availability of product information and the amount of useful information would considerably influence customers to choose the most proper channel to search or purchase. Wolfenbarger and Gilly (2001) revealed that information availability was one of the reasons for customers to choose online channels to search and purchase goods. Scholars have stated that the Internet provides the most efficient ways for customers to obtain that information. If customers could easily receive information and compare prices from one channel, they will tend search and make a purchase there (Nobel et al, 2005). Thus, we propose hypothesis 1:

H₁: Customers who take information availability more seriously have greater chances to search goods through an online channel.

Search Convenience. Customers would select a channel which can quickly provide product information (Verhoef et al., 2007). Gupta, Su, and Walter (2004) argued that online channels could offer faster outcomes for searching product information. In addition, Bang et al. (2013) stated that mobile devices had the advantage to search information at anytime, anywhere. Several studies have also indicated that search

convenience affects the channel choice for customers to search. (Kacen, Hess, & Kevin Chiang, 2013; Schröder & Zaharia, 2008; Verhoef et al., 2007). Thus, we propose hypothesis 2:

H₂: Customers who take search convenience more seriously have greater chances to search goods through an online channel.

Search Enjoyment. Forsythe, Liu, Shannon, and Gardner (2006) determined that customers were highly concerned their enjoyment of searching process. Customers need more hedonic elements from the shopping experience (Schröder and Zaharia, 2008). Several scholars have determined that customers would use a channel which could provide enjoyable shopping experience. Customers would prefer to search goods in stores, because they could experience more shopping pleasure and had more face-to-face interaction with sale staffs.(Konus, Verhoef, & Neslin, 2008; Levin, Levin, & Weller, 2005; Jones,1999; Rohm & Swaminathan, 2004; Schröder & Zaharia, 2008). Thus, we propose hypothesis 3:

H₃: Customers who take search enjoyment more seriously have greater chances to search goods through an offline channel.

Tangible. Shin (2007) indicated that customers do not purchase goods through an online channel because they cannot assess the actual quality of products at the time of purchase, thus causing uncertainty regarding the goods. Customers can touch and experience the real product through an offline channel. Customers would tend to check physical products at stores to reduce the uncertainty (Jiang and Balasubramanian, 2014). Numerous studies have also indicated that tangible factor was crucial in O2O marketing (Kacen et al., 2013; Levin et al., 2005; Yu et al., 2011). Thus, we propose hypothesis 4:

H₄: Customers who take tangible products more seriously have greater chances to search goods through an offline channel.

Media Richness. Media richness is a characteristic that enables a marketing channel to communicate information to customers and help them undertake a decision-making channel (Maity & Dass, 2014). Relevant literature reports that media richness affects the information search of customers. Brunelle (2009) indicated that customers are affected by media richness change their intent to adopt e-commerce to search for information. Maity and Dass (2014) stated that offline, online and mobile would provide different degrees of media richness. If customers want to acquire in-depth information or timely feedback then they could ask a salesperson in a physical store. We believed that media richness could affect the customers' choice of search channel.

Thus, we propose hypothesis 5:

H5: Customers who take media richness more seriously have greater chances to search goods through an offline channel.

For Purchasing Process

Price and Promotion. Several scholars indicated that price and promotion influence the channel choice of customers in the process of purchase. Bakos (1997) indicated that price is a critical factor influencing the choice of channel to purchase goods. For instance, customers believe that they can find inexpensive prices through the online channel and would thus use an online channel to search for prices and promotions for a product. Numerous studies have revealed that customers search for products using an offline channel but use the online store to purchase these products when the price in the offline channel is exceedingly high (Crespo & Del Bosque, 2010; Kacen et al., 2013; Konoş et al., 2008; Maity & Dass, 2014; Schröder & Zaharia, 2008; Van Baal & Dach, 2005; Verhoef et al., 2007). Therefore, we believe that price and promotion are crucial factors in the O2O marketing model. Thus, we propose hypothesis 6:

H6: Customers who take price and promotion more seriously have greater chances to make purchases through an online channel.

Product Variety. Keeney (1999) argued that if stores provided more product selections, the more opportunity customers could make a purchase there. Verhoef et al. (2007) indicated that if stores provided an assortment of products(ex: popular or new product), customers could change the channel. In addition, numerous studies have shown that e-retailing can provide a wide assortment of products and abundant information. These benefits are often discussed in the context of superior e-merchandizing motivating people to shop online (Clemes, Gan, & Zhang, 2013; Evanschitzky, Iyer, Hesse, & Ahlert, 2004), Thus, We propose hypothesis 7:

H7: Customers who take product variety more seriously have greater chances to make purchases through an online channel.

Purchase Convenience. Verhoef et al. (2007) determined that if a channel provided high efficiency and speed in the purchase process, customers would prefer to purchase goods through that channel. In addition, Schröder and Zaharia (2008) indicated that convenience orientation characterizes customers who regard shopping as a rational problem-solving process. Acquiring a sought-after product with a minimal investment in time and physical and mental effort is crucial to customers. Gupta et al. (2004) indicated that if customers wanted to search for and purchase products, they would

consider whether considerable effort or time would be expended to search for products. For instance, if customers search for products at a physical store, they would expend much effort and time on the road. In addition, if customers cannot find an appropriate product (when the price is exceedingly high or the product does not have favorable attributes), they would need to expend additional effort and time searching for the product. Bang et al. (2013) stated that the advantages of mobile devices are that information can be searched for and products can be purchased anytime, anywhere. Several studies have shown that purchase convenience was a crucial factor in the purchase process (Chocarro, Cortiñas, & Villanueva, 2013; Kwon & Jain, 2009; Schröder & Zaharia, 2008). Thus, if a channel could expedite the purchase process, customers would select this channel to purchase products. Thus, we propose hypothesis 8:

H₈: Customers who take purchase convenience more seriously have greater chances to make purchases through an online channel.

Purchase Risk. Cox and Rich (1964) defined risk perception as perception of uncertainty in the process of purchase. Taylor (1974) indicated that customers changed the purchase channel because of different risks that influenced customer decisions. He stated that product performance risk and security risk might affect purchase decisions. Featherman and Pavlou (2003) indicated that customers were concerned about potential loss of control over personal information; for example, when information on customers is used without their knowledge or permission, they seldom purchase on online stores. Kleijnen, De Ruyter, and Wetzels (2007) observed that customers concerned about risk seldom use m-commerce. Several studies have indicated that purchase risk affect the channel choice of customers (Clemes et al., 2013; Liu & Forsythe, 2011; Schröder & Zaharia, 2008). Thus, we propose hypothesis 9:

H₉: Customers who take purchase risk more seriously have greater chances to make purchases through an offline channel.

Service quality. Many studies have indicated that if stores provided superior service quality, then customers may change the final purchase channel. Parasuraman, Zeithaml, and Berry (2002) indicated that service quality includes tangibles, reliability, responsiveness, assurance, and empathy. A. Parasuraman, Zeithaml, and Malhotra (2005) also discussed e-service quality, asserting that offline quality and online quality differed, and proposed an e-quality includes can offer various means of returns or more make items available for delivery within a suitable time frame. In addition, Kacen et al. (2013) indicated that if customers who cared about service quality tended

to purchase at offline stores. Numerous studies have indicated that service quality is a critical factor in the purchase process (Verhoef et al., 2007; Yu et al., 2011). Thus, we propose hypothesis 10:

H₁₀: Customers who take service quality more seriously have greater chances to make purchases through an offline channel.

Immediate possession. Several studies have suggested that direct marketers can reduce customer resistance to catalogues or make Internet purchases by reducing delivery time. Thus, customers may decide to use offline stores by immediate possession instead of online stores (Balasubramanian, 1998; Rohm & Swaminathan, 2004). Alba et al. (1997) stated that brick and mortar retailers provide instantaneous possession of products, whereas purchasing through online retailers incurs a time delay. Numerous studies have indicated that if customers could receive the product immediately, they could change the purchase channel (Chiang, Zhang, & Zhou, 2006; Kacen et al., 2013; Noble et al., 2005; Rohm & Swaminathan, 2004). Thus, we propose hypothesis 11:

H₁₁: Customers who take immediate possession more seriously have greater chances to make purchases through an offline channel.

Research Methodology

This study designed four research steps to examine how O2O marketing works. First, Base on literature review, we developed a questionnaire to measure O2O marketing adoption behavior. Second, samples were collected by using Insightxplorer's web survey system, Third, using exploratory factor analysis to extract the key factors for the O2O marketing adoption behavior.. Fourth, we Conducting probit regression analysis to measure the searching and purchasing behavior on offline and online channels.

Data Collection and Sample

Based on the literature review, this study developed a questionnaire that comprised 42 questions to measure the key constructs of O2O marketing, as shown in Questionnaire design of O2O marketing constructs. InsightXplorer (IX) survey and Cyberpanel system were conducted to collect samples (InsightXplorer, 2014). In the web survey ,we first asked respondents the channel through which they usually search for or purchase products, such as apparel, personal computers, and smartphones; in other words, the channel that they most frequently preferred to search for or purchase

products. In order to ensure that the questionnaire applied to Internet users, we used a structured sampling proportion of gender and age, according to the internet population report, published by the Taiwan Network Information Center (TWNIC). The current study received a total of 689 valid responses. Among the respondents, 339 (49.2%) of the participants were men and 350 (50.8%) were women; 185 (26.8%) were aged between 20 and 29 years, 228 (33.1%) were aged between 30 and 39 years, 160 (23.3%) were aged between 40 and 49 years, and 116 (10.2%) were older than 50 years.

Table 1. Questionnaire design of O2O marketing constructs

Constructs [↙]	Number of questions [↙]	Serial number [↙]
Information Availability [↙]	4 [↙]	IA1-IA4 [↙]
Search Convenience [↙]	3 [↙]	SC1-SC3 [↙]
Media Richness [↙]	4 [↙]	MR1-MR4 [↙]
Enjoyment [↙]	4 [↙]	EN1-EN4 [↙]
Tangible [↙]	3 [↙]	TAN1-TAN3 [↙]
Service Quality [↙]	4 [↙]	SQ1-ACS4 [↙]
Purchase Convenience [↙]	4 [↙]	PC1-PC4 [↙]
Purchase Risk [↙]	6 [↙]	RC1-RC6 [↙]
Price and Promotion [↙]	4 [↙]	PP1-PP4 [↙]
Product Variety [↙]	3 [↙]	PV1-PV3 [↙]
Immediate Possession [↙]	3 [↙]	IP1-IP3 [↙]

Results and Analysis

Reliability. This study applied Cronbach's α to measure the reliability of the questionnaire. The Cronbach's α of each dimension is presented as follows: Information Availability was 0.90, Search Convenience was 0.89, media richness was 0.81, Enjoyment was 0.88, Tangible was 0.86, Service Quality was 0.83, Purchase Convenience was 0.84, Purchase Risk was 0.90, Price and Promotion was 0.83, Product Variety was 0.80 and Immediate Possession was 0.76. All the Cronbach's α of our questionnaire were higher than 0.7, indicating a high level of internal consistency.

Factor analysis. Exploratory factor analysis (EFA) was conducted to extract factors of O2O adoption behavior. The Kaiser–Meyer–Olkin measure of sampling adequacy was calculated (KMO = 0.961), and Bartlett's test of sphericity verified that

relationships among the items existed (chi-square = 22985.336, d.f. = 1128, Sig. < 0.05). Therefore, factor analysis was suitable for this study.

The results of EFA revealed five factors as the search factor of O2O marketing adoption behavior: information availability, search convenience, media richness, enjoyment, and tangibles (see Table 2). According to Verhoef et al. (2007), To et al. (2007), Shim, Eastlick, Lotz, and Warrington (2001), and Brunelle (2009), this study confirmed that these five factors were components of the search factor. The results of EFA revealed six factors as the purchase key elements of O2O marketing adoption behavior: service quality, purchase convenience, purchase risk, price and promotion, product variety, and immediate possession (see Table 3). According to Verhoef et al. (2007), Kleijnen, de Ruyter, and Wetzels (2007), and Noble, Griffith, and Weinberger (2005), this study confirmed that these six factors were components of the purchase factor.

Table 2. EFA Results for Searching Behavior

Factor [↗]	Cronbach's α [↗]	Eigen value [↗]	% of Variance [↗]	Cumulative % [↗]
Information Availability [↗]	0.72~0.85 [↗]	3.44 [↗]	19.16 [↗]	19.16% [↗]
Enjoyment [↗]	0.61~0.89 [↗]	3.10 [↗]	17.25 [↗]	36.41% [↗]
Tangible [↗]	0.79~0.89 [↗]	2.47 [↗]	13.76 [↗]	50.17% [↗]
Media Richness	0.61~0.74 [↗]	2.47 [↗]	13.73 [↗]	63.89% [↗]
Search Convenience [↗]	0.61~0.79 [↗]	2.20 [↗]	12.58 [↗]	76.47% [↗]

Table 3. EFA Results for Purchasing Behavior

Factor [↗]	Cronbach's α [↗]	Eigen value [↗]	% of Variance [↗]	Cumulative % [↗]
Purchase risk [↗]	0.72~0.81 [↗]	4.35 [↗]	18.11% [↗]	18.11% [↗]
Price and Promotion [↗]	0.61~0.84 [↗]	2.96 [↗]	12.31 [↗]	30.43% [↗]
Service quality [↗]	0.57~0.69 [↗]	2.75 [↗]	11.47 [↗]	41.90% [↗]
Purchase convenience [↗]	0.47~0.82 [↗]	2.32 [↗]	9.65 [↗]	51.54% [↗]
Product variety [↗]	0.65~0.77 [↗]	2.27 [↗]	9.45 [↗]	60.99% [↗]
Immediate possession [↗]	0.54~0.82 [↗]	2.26 [↗]	9.42 [↗]	70.41% [↗]

Probit regression analysis. This study applied probit regression to explore customers' tendency to search and purchase on offline and online channels. In addition, we also compared the differences in searching and purchasing behavior between two different goods, apparel and smartphones.

For apparel products, regarding search stage, The results of analyzing apparel searching behavior showed that only tangibles factor ($\beta=.174$, $Z=2.18$, $p<0.05$) significantly influenced customers to search offline. However, information availability, search convenience, media richness, and enjoyment had no impacts on both channels.

Regarding purchase stage, The results of analyzing apparel purchasing behavior showed that product variety ($\beta=.307$, $Z=2.89$, $p<0.05$) and immediate possession ($\beta=.270$, $Z=2.75$, $p<0.05$) revealed significant influences to purchase offline. Meanwhile, price and promotion($\beta=.182$, $Z=1.88$, $p<0.1$) factors showed marginally impacts to purchase online ($p<.1$). Service quality, purchase convenience, purchase risk, and immediate possession showed no influences on both channels.

For smartphones products. Regarding search stage, The results of searching smartphone behavior on these two channels showed that search convenience ($\beta=.412$, $Z=1.985$, $p<0.05$) significantly increased customers tendency to search online, but tangibles($\beta=.175$, $Z=2.361$, $p<0.05$) still significantly affected them to search offline. Meanwhile, information availability, media richness, and enjoyment had no significant influences.

Regarding purchasing stage. The results of purchasing smartphone revealed that **purchase risks** ($\beta=.289$, $Z=2.548$, $p<0.05$) significantly affect customers to purchase offline. However, service quality, product variety, purchase convenience, price and promotion, and immediate possession had no influences on both channel.

Conclusion and Implications

O2O marketing is a widely discussed topic among marketers and provides channels for them to communicate with customers. Based on literature review, we successfully develop the measures for adopting O2O marketing model.

Through exploratory factor analysis, we extracted five factors: information availability, search convenience, media richness, enjoyment, and tangibles for search

behavior, and six factors : service quality, purchase convenience, purchase risk, price and promotion, product variety, and immediate possession for purchase behavior on offline and online channels.

We then used probit regression to examine the relationship among the channel adoption factor, search channel, and purchase channel. In the offline channel, we determined that tangibles matched our theoretical derivation, but enjoyment, media richness, and service quality were not significant. In addition, we determined that purchase convenience was not significant.

Regarding apparel, customers were most concerned about whether they could touch the product; thus, the customers tended to use the offline channel to search for goods. In the purchase process, customers reported that the offline channel can provide product variety, reduce purchase risk, and immediate possession. Hence, they would make their final purchase offline. By contrast, the online channel can provide additional information on price and promotion. Thus, if the apparel industry provided additional promotion in the online channel and provided consumers with a physical store to try on clothes, it would attract more consumers to purchase products

Regarding smartphones, customers also considered tangible products more, and thus tended to use the offline channel to search for products. By contrast, online stores can provide relevant product information more quickly; thus, customers tend to search through the online store. Regarding purchase behavior, customers were more concerned about purchase risk; thus, they tended to visit a physical store to purchase products because that could reduce customer purchase risk. Thus, in the mobile phone industry, businesses can provide additional information to consumers on the online channel and provide customers with an opportunity to try products to attract customers to purchase goods.

Finally, this study confirmed the relationship between the channel adoption behavior and channel adoption factor in the search for and purchase process. Based on our findings, marketers could learn how to apply the resources on both channels to develop a better O2O marketing strategy, in order to provide the most efficient way for transactions by integrating online and offline channels. This understanding can be useful for developing marketing plans. Different channels and stimuli that help attract customers to search for and purchase goods must be considered.

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