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Understanding the Customer Activity in Omni-channel Commerce: An Exploratory Analysis

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ABSTRACT

With the proliferation of mobile internet and social media, the simultaneous use of online and offline channels by customers is facilitating the emergence of new shopping behaviors. Omni-channel retailing has been given a considerable attention in recent literature. Although lots of research was devoted to understanding consumers' omni-channel adoption, few studies have discussed the customer's online behaviors and offline behaviors simultaneously in an omni-channel context. By applying activity theory(AT) perspective, this study aims to create insight into omni-channel customers' service on customers' behavior in online/offline context. Activity theory has emerged as a new philosophical framework for conceptualizing human activities. Since AT paradigm provides useful supplement to human information processing, AT could provide guide to understand consumer's activity. Drawing upon AT, this study adopts AT to compare consumer activity in online and offline context and to apply it to practical research. From online customer's point of view, contradictions between object to save costs and rules related to concern about delivery costs can be generated in the process of making a decision about where they will purchase. Meanwhile, from offline customer's perspective, contradictions between object to save efforts and rules related to less variety can be generated in the process of shopping offline.

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KEYWORDS: Omni-channel retailing, Omni-channel commerces, Customer activities, Customer contexts, Activity theory

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1. Introduction

Omni-channel retailing has been given a considerable attention in recent literature[1-4]. Although omni-channel is confused or interchanged with multi-channel and cross-channel in the literature, omni-channel refers to the channels jointly managed, in which customers can use digital channels for research and experience the physical store in a single transaction process [5].

With the proliferation of mobile internet and social media, the simultaneous use of online and offline channels by customers is facilitating the emergence of new shopping behaviors, such as showrooming and webrooming[1]. For example, O2O (online to offline) application is a mobile device application platform to bridge the online and offline environments and to generate integrated service for customers[6]. O2O application is the one of advanced way for providing omni-channel shopping experience.

Despite this optimistic appraisal of omni-channel retailing, online-offline channel integration can be a double-edged sword, namely, omni-channel can enhance or decline business performance. Thus, to make omni-channel retailer get advantages, we need to understand customer behavior in omni-channel.

By applying activity theory perspective, this study aims to create insight into omni-channel customers' service on customers' behavior in online/offline context. This study can contribute to research and practice by offering a consolidated overview of the current understanding of activities of both online shoppers and offline shoppers and by proposing practical implications for the omni-channel strategy in retailing.

The article is organized as follows. This study briefly provides a background on omni-channel retailing in the following section and then describes customer activity based on activity theory in the third section. The fourth section presents the research methods and data analysis. We conclude the paper in the fifth section.

2. Omni-channel retailing

Omni-channel management refers to the synergetic management of the numerous available channels and customer touch-points intended to optimize the customer experience and performance across channels[3]. From the customer's point of view, customers can combine various online channels such as social media and mobile apps with the offline channel throughout their customer activity in an omni-channel context. Thus, omni-channel retailers must offer consumers a holistic shopping experience to encourage customers to stay with them[7].

Although lots of research was devoted to understanding consumers' omni-channel adoption, few studies have discussed the customer's online behaviors and offline behaviors simultaneously in an omni-channel context[8-10]. Lu et al.[11] provide a better understanding of consumers' transfer usage from offline to online services by using the valence framework. Yang et al.[8] explored factors that influence a consumer's decision on transfer from an offline channel to an

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online channel, drawing upon brand extension theory and expectation-confirmation theory. Lin [12] investigated how multi-channel service quality affect mobile customer loyalty in an online-and-mobile retail context.

Meanwhile, Heitz-Spahn[13] explored cross-channel free riding, in which customers select one retailer's channel in the preparation stage and then switch to another retailer's channel to purchase. Falk et al.[14] explored the relationships between offline channel satisfaction and perceptions about a new self-service channel by using Status Quo Bias theory.

Most prior research investigates single facets of online or offline channel in detail while neglecting a holistic dimensions of omni-channel [15]. To address this research gap, we apply activity theory to get deeper understanding of customers' activity in both online and offline channel.

3. Customer activity

Activity theory (AT) has emerged as a new philosophical framework for conceptualizing human activities[16, 17]. AT builds on the study of work behavior developed by Russian psychologists such as Vygotsky and Leont'ev in the former Soviet Union. Since AT paradigm provides useful supplement to human information processing[16], AT could provide guide to understand consumer's activity[18].

AT defines and relates key components that influence human activity. As shown in the Figure 1, Engestrom's interpretation of AT provides a model for describing and analyzing activities[19].

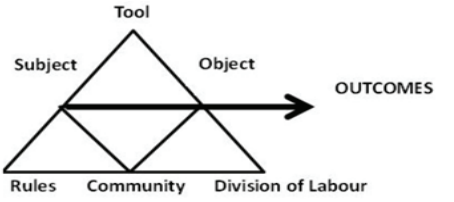

Figure. 1. The definitive hierarchy of activity by Engestrom[19] (Source: [20])

Table 1. Components of customer activity (Source: [22])

Components	Definitions
Subject	The individual or sub-group whose agency is chosen as the point of view in the analysis.
Tool	Physical and symbolic, external and internal instruments, including both tools and signs, which are used to transform the object.
Rules	The explicit and implicit regulations, norms and conventions that constrain actions and interactions within the activity system.
Community	Multiple individuals and/or sub-groups who share the same general object of activity and who construct themselves as distinct from other groups.
Division of labor	Both the horizontal division of tasks between the actors involved and to the vertical division of power and status.
Object	The 'raw material' or 'problem space' at which the activity is directed and which is molded and transformed into an outcome with the help of tools.

According to AT, the relationship between subject and object constitutes the kernel of an activity. Human activity is carried out by the use of tool. Since all human activity is embedded in a social context, the systemic relationships between the subject and its environment are

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included as the concepts of rules, community, and division of labor. Furthermore, outcomes are the intended or not intended results[21]. The definitions of components of human activity are described in <Table 1>. Drawing upon AT, this study adopts AT to compare consumer activity in online and offline context and to apply it to practical research[18].

AT explains the driving forces of human activity as the contradictions within key elements of an activity and between activities[17]. Due to such contradictions described in <Table 2>, human activity is constantly developing and changing new needs.

Table 2. Classifications of contradictions in activity system (Source: [17])

Category	Definitions
Primary contradiction	the contradiction of commodity between use and exchange value
Secondary contradictions	the contradiction between the corners of the activity system
Quaternary contradictions	the contradictions between the activity looked at and the neighboring activities
Tertiary contradictions	the contradictions between the considered activity and the activity (existing or non-existing) it potentially could become

4. Research Method and Data Analysis

4.1 Research method

To explore customers' activity toward the emerging omni-channel retailer context, we conducted face-to-face interviews since exploratory research gives opportunities to deal with new or rarely investigated problems[23]. Although AT does not provide ready-made methods for research [19], semi-structured interviews were used revolving around five main components: tool, rules, community, division of labor, and object. The data are collected through interviews from the participants who have already experienced the online shopping. Participants were purposely sampled to represent a wide range in gender and age to reflect the possibility of opinions. The demographic characteristics of participants are shown in the <Table 3>. The information collected was qualitative analyzed following activity theory to extract key components of activity which can motivate or hinder them to shop online and/or offline[18].

Table 3. Demographics of participants

Category		Gender	
		Male	Female
Age groups	20-29	2	2
	30-39	3	3
	40-49	3	3
	50 or older	2	2
Sub total		10	10
Total		20	

4.2 Research results

From an interpretive analysis of the data in the interviews, the expected components of activities of both online shopping and offline shopping is shown in <Table 4>.

From online customer's point of view, contradictions between object to save costs and rules related to the concern about delivery costs can be generated in the process of making a decision about where they will purchase. Meanwhile, from offline customer's perspective,

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contradictions between object to save efforts and rules related to less variety can be generated in the process of shopping offline. Thus omni-channel retailer should resolve these contradictions which customers could face to enhance performance.

Table 4. Summary of customer activities in omni-channel commerce

Components	Outcome	
	Online purchase	Offline purchase
Subject	· Individual shopper	· Individual shopper
Tool	· E-tailors · Shopping service of internet portals · Comparison shipping websites · Social commerce websites · Overseas direct purchase	· Department stores · Supercenters · Wholesalers · Traditional markets · Convenience stores · Telephone order
Rules	· Security fears · Concern about delivery costs · Limited opportunity to test the goods	· Limited time to shop offline · Less variety and selection
Community	· Friends · Online community	· Family
Division of labor	· Informant	· Household shopping
Object	· Save costs · Compare prices · Get detailed product content · Take personalized promotions	· See or feel item in person · Save time and efforts · Instant gratification · Buy on trust

5. Conclusions

Given the lack of holistic framework to understand customers' activity in omni-channel context, this paper provided deeper understanding of omni-channel retail. The purpose of this study is to apply activity theory to understand customers' activity in omni-channel commerce and to identify the key elements of activity that affect customers' diverse activities in omni-channel commerce. We also hope to identify the relationships between each element in customer's activity so that these relationships may be applied during the development of omni-channel model.

References

[1] D. Herhausen, J. Binder, M. Schoegel, and A. Herrmann, *Integrating bricks with clicks: Retailer-level and channel-level outcomes of online–offline channel integration*, Journal of Retailing, Vol. 91, No. 2, pp. 309-325, 2015.

[2] K. Pauwels, and S. A. Neslin, *Building with bricks and mortar: The revenue impact of opening physical stores in a multichannel environment*, Journal of Retailing, Vol. 91, No. 2, pp. 182-197, 2015.

[3] P. C. Verhoef, P. K. Kannan, and J. J. Inman, *From multi-channel retailing to omni-channel retailing: Introduction to the special issue on multi-channel retailing*, Journal of Retailing, Vol. 91, No. 2, pp. 174-181, 2015.

[4] S. Hosseinia, M. Merza, M. Röglingerb, and A. Wenningerb, *Mindfully going omni-channel: An economic decision model for evaluating omni-channel strategies*, Decision Support Systems, Vol. 109, pp. 74-88, 2018.

[5] W. Piotrowicz, and R. Cuthbertson, *Introduction to the special issue information technology in retail: Toward omnichannel retailing*, International Journal of Electronic

www.kci.go.kr

Commerce, Vol. 18, No. 4, pp. 5-16, 2014.

[6] C-D. Chen, C-K. Huang, M-J. Chen, and E. C. S. Ku, *User's adoption of mobile O2O applications: Perspectives of the uses and gratifications paradigm and service dominant logic*, in Pacific Asia Conference on Information Systems(PACIS), Paper 253, 2015.

[7] R. Hansen, and S. K. Sia, *Hummel's digital transformation toward omnichannel retailing: Key lessons learned*, MIS Quarterly Executive, Vol. 14, No. 2, pp. 51-66, 2015.

[8] S. Yang, Y. Lu, and P. Y. K. Chau, *Why do consumers adopt online channel? An empirical investigation of two channel extension mechanisms*, Decision Support Systems, Vol. 54, No. 2, pp. 858-869, 2013.

[9] S. Yang, Y. Lu, L. Zhao, and S. Gupta, *Empirical investigation of customers' channel extension behavior: Perceptions shift toward the online channel*, Computers in Human Behavior, Vol. 27, No. 5, pp. 1688-1696, 2011.

[10] A. Rapp, T. L. Baker, D. G. Bachrach, J. Ogilvie, and L. S. Beitelspacher, *Perceived customer showrooming behavior and the effect on retail salesperson self-efficacy and performance*, Journal of Retailing, Vol. 91, No. 2, pp. 358-369, 2015.

[11] Y. Lu, Y. Cao, B. Wang, and S. Yang, *A study on factors that affect users' behavioral intention to transfer usage from the offline to the online channel*, Computers in Human Behavior, Vol. 27, No. 1, pp. 355-364, 2011.

[12] H-H. Lin, *The effect of multi-channel service quality on mobile customer loyalty in an online-and-mobile retail context*, The Service Industries Journal, Vol. 32, No. 11, pp. 1865-1882, 2012.

[13] S. Heitz-Spahn, *Cross-channel free-riding consumer behavior in a multichannel environment: An investigation of shopping motives, sociodemographics and product categories*, Journal of Retailing and Consumer Services, Vol. 20, No. 6, pp. 570-578, 2013.

[14] T. Falk, J. Schepers, M. Hammerschmidt, and H.H. Bauer, *Identifying cross-channel dissynergies for multichannel service providers*, Journal of Service Research, Vol. 10, No. 2, pp. 143-160, 2007.

[15] T. Kollmann, A. Kuckertz, and I. Kayser, *Cannibalization or synergy? Consumers' channel selection in online–offline multichannel systems*, Journal of Retailing and Consumer Services, Vol. 19, Issue 2, pp. 186-194, 2012.

[16] G. Z. Bedny, M. H. Seglin, and D. Meister, *Activity theory: history, research and application*, Theoretical Issues in Ergonomics Science, Vol. 1, Issue 2, pp. 168-206, 2000.

[17] Y. Engestrom, *Activity theory as a framework for analyzing and redesigning work*, Ergonomics, Vol. 43, No. 7, pp. 960-974, 2000.

[18] J. Mickelsson, *Customer activity: A perspective on service use*, Hanken School of Economics, Helsinki, Finland, 2014.

[19] Y. Engestrom, *Learning by expanding: An activity theoretical approach to developmental research*, Orienta-Konsultit, Helsinki: 1987.

[20] H. Hasan, and A. Kazlauskas, *Activity theory: who is doing what, why and how*, in Being Practical with Theory: A Window into Business Research, H. Hasan, THEORI: Wollongong, Australia, 2014.

www.kci.go.kr

[21] F. Blackler, N. Crump, and S. McDonald, *Organizing processes in complex activity networks*, Organization, Vol. 7, No. 2, pp. 277-300, 2000.

[22] N-I. Boer, P. J. van Baalen, and K. Kumar, *An activity theory approach for studying the situatedness of knowledge sharing*, Proceedings of the 35th Hawaii International Conference on System Sciences, pp. 90-99, 2002

[23] T. Brown, *Confirmatory factor analysis for applied research*, New York: Guilford Press, 2006.

옴니채널 상거래에서 고객 활동에 대한 이해: 탐색적 연구

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요 약

모바일과 소셜미디어의 확산 과정에서, 고객들이 온라인과 오프라인을 동시에 사용하기 시작하면서 새로운 구매 행동을 일으키고 있다. 이러한 변화에 대응하기 위하여 온라인과 오프라인을 통합하는 옴니채널이 증가하고, 많은 연구들에서 옴니채널이 다루어지기 시작하였다. 본 연구는 온라인과 오프라인 상황에서 고객의 행동을 체계적으로 이해하기 위한 탐색 연구를 진행하였으며, 이를 위해 활동 이론을 적용하였다. 활동 이론은 인간의 활동에 대한 체계적인 이해를 제공하고, 각 활동의 구성 요소 간 모순을 확인하는 데 도움을 제공한다. 본 연구의 결과는 옴니채널의 온라인 구매 활동과 오프라인 구매 활동에서 발생하는 모순을 파악하였다. 본 연구에서 확인된 이러한 모순들은 향후 옴니채널 활성화를 위해서 해결해야 할 문제점이다. 연구 결과에 의하면, 온라인 구매 활동 측면에서, 비용 절감 목표와 배송 비용 관련 우려라는 규칙 간의 모순이 발생할 수 있다. 한편, 오프라인 구매 활동 측면에서, 노력 절감 목표와 구매 품목 다양성 부족이라는 규칙 간의 모순이 발생할 수 있다.

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