

Summer 5-27-2016

Modeling the Motivation of Users' Sharing Option: A Case Study Based on A Car-Sharing Digital Platform

Xusen Cheng

School of Information Technology & Management, University of International Business and Economics, China

Runge Zhu

School of Information Technology & Management, University of International Business and Economics, China

Shixuan Fu

School of Information Technology & Management, University of International Business and Economics, China,
fsx8888@163.com

Follow this and additional works at: <http://aisel.aisnet.org/whiceb2016>

Recommended Citation

Cheng, Xusen; Zhu, Runge; and Fu, Shixuan, "Modeling the Motivation of Users' Sharing Option: A Case Study Based on A Car-Sharing Digital Platform" (2016). *WHICEB 2016 Proceedings*. 64.

<http://aisel.aisnet.org/whiceb2016/64>

This material is brought to you by the Wuhan International Conference on e-Business at AIS Electronic Library (AISeL). It has been accepted for inclusion in WHICEB 2016 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Modeling the Motivation of Users' Sharing Option: A Case Study

Based on A Car-Sharing Digital Platform

Xusen Cheng¹, Runge Zhu¹, Shixuan Fu¹

¹School of Information Technology & Management, University of International Business and Economics, China

Abstract: Sharing economy is associated with a series of economic activities in terms of renting, lending, trading, bartering and swapping of goods, service, space or money, that take place in organized systems or digital platforms. In this research, we interviewed 50 drivers, a kind of users type who provides cars and service from a car-sharing digital platform. Based on the prior studies of motivation, we combined Social Exchange Theory (SET) and Technology Acceptance Model (TAM) to identify salient motivators in this context. Furthermore, building on Self-determination Theory (SDT), we propose a motivation model of users' sharing option in digital platform. The findings extend literatures of motivation researches in the context of sharing economy as well as help guide the development and operation of sharing economy digital platform.

Keywords: sharing economy, motivators, motivation model, Self-determination Theory

1. INTRODUCTION

Sharing is a phenomenon as old as humankind, while the sharing economy is a phenomenon born along with the development of economy and society^[1]. Sharing activities appeared for both functional reasons like survival and as an altruistic act as a convenience, courtesy, or kindness to others^[2]. At the beginning, sharing was more likely to take place within close kin, neighbor, and friends than among strangers. Then, the form of sharing economy was facilitated by Internet and especially web 2.0 on a larger scale and various ways. The Economist published an editorial in March 2013, addressing the sharing economy and paying tribute to an emerging trend that is transforming consumer behavior today^[3]. In 2010, sharing systems had an estimated market volume of as much as USD 100bn^[4]. Airbnb, the representative of sharing economy form based on digital platform, was offering temporary space such as apartments, castles, or houseboats in more than 34,000 cities in 192 countries^[5]. By 2016, the car sharing market in North America alone is estimated to be worth USD 3.3bn^[6]. In China, the digital platforms offering car-sharing service based on cellphone applications, such as DiDi Taxi, DiDa, 51 have got a rapid development in the last two years.

This phenomenon mentioned above illustrates that sharing economy especially in digital platform is a competitive business model. However, there are still rare knowledge and researches in sharing economy, especially from the perspective of user behavior. User participation is a determinant factor of whether a sharing economy digital platform can enlarge business scale and market share, be successful ultimately, or not. Research contributions addressing usage motivations of sharing economy digital platform remain pretty rare and have some shortcomings^[7]. First, most of the research findings did not explicitly differentiate between user types, namely providers and customers, which actually distinguished themselves from motivation to behavior. Second, as sharing economy combined some of the characteristics of both traditional and online business, the identified motivations in existing researches are not all-inclusive. Third, research primarily focuses on isolated determinants, instead of assessing them and their relative strengths holistically, which, to some extent, was resulted from the lack of systematic theory of user behavior in sharing economy. To respond to these research

¹ Corresponding author. Email: fsx8888@163.com (Shixuan Fu),

gaps, this paper aims to identify users' motivations in the context of sharing economy in digital platform and build a motivation model based on Self-determination Theory. The research questions are as follows:

RQ1: What are the motivators of users' sharing option through digital platform?

RQ2: What's the motivation model in sharing economy based on self-determination theory?

In the next section, a literature review of the related work is presented. Furthermore, we describe the theory background and framework. Then we give the research method and data collection method. Finally, we give a conclusion of this paper, including theoretical contribution, practical implication and our future works.

2. LITERATURE REVIEW

2.1 Sharing economy

Sharing is an alternative to the private ownership that is emphasized in both marketplace exchange and gift giving. In sharing, two or more people may enjoy the benefits or cost that flow from possessing a thing^[8]. Most of the existing researches explained that sharing construct includes several components from economics point of view: to balance the available resources and needs of consumers. Thus, it's originally one of the economic activities forms with the characteristics of equivalent exchange. However, the equivalent does not refer to monetary value solely, instead, including other cultural, social and environmental values. There are some differences between sharing economy in digital platform and traditional business model. On one hand, from the perspective of participants, the providers are self-driven to participating these sharing activities without any mandatory constraint. It is similar with the answerers on the online Q&A community (knowledge sharing) to some extent^[9]. They care about the non-economic returns, such as social recognition, relationship networking and self-value. On the other hand, sharing economy in digital platform is based on Internet, especially mobile Internet and smart cellphone, connecting strangers together. Similar with e-commerce, the adoption of Internet techniques and the design of digital platform are determinant factors of the sharing process^[10].

As sharing economy has drawn an increasing attention in worldwide, recently, there are more and more scholars did researches in that context from various perspectives, which can be divided into three aspects roughly. Firstly, studies from the macroscopic and historical viewpoint are in the majority. For instance, Cusumano presented the development process of sharing economy by compared with traditional business models^[11]. The work of Firnkorn and Müller focused on the environmental effects of sharing economy^[12]. The practical significance of sharing economy was discussed by some researchers in their research findings^[13]. Secondly, business model and operation mechanism of sharing economy from the organizational dimension is another valuable research area. For example, Weber analyzed the risk and intermediation factors of sharing economy business model as well as gave suggestions^[14]. Examples are given and an assessment is made of the reasons for the growth of sharing economy^[11]. Thirdly, there are also some scholars devoted themselves to the research of user behavior. Gansky emphasized the importance of the customer role in sharing economy, considering the effects of customers' benevolence factors such as recognition of reliable stuff, space, time, and land, all which can be shared and monetized^[15]. The determinants of users' satisfaction while using a sharing economy digital platform were also studied by some scholars^[16].

In summary, most of the existing contributions about sharing economy did the researches from a macro or organizational perspective. There is not much knowledge about user behavior in that particular context. As motivation is an important part in user behavior study, in the next section, we will give a review of the researches about motivation in related contexts.

2.2 Motivation

Many existing studies have investigated the motivations in various kinds of business contexts and have suggested a wide range of factors as reasons for sharing things and services through digital platform. In the

following, we will summarize the antecedents of motivation mechanism as well as present some salient motivators in related context we mentioned in the first sector.

2.2.1 Motivation mechanism

The theories of Maslow and Herzberg are considered classics in motivation mechanism. Maslow pointed out there are five classes of needs from the basic, lower-order needs such as the physiological drives to higher-order needs for actualization or growth^[17]. In the work of Herzberg, he divided the motivation into just two categories, typically referred to either as satisfiers and motivators, with the motivators being considered higher order^[18]. Then, Hackman and Oldham argued that the most effective means of motivating individuals is through the optimal design of jobs^[19]. Based on understanding the motivation factors solely, their work focuses on facilitating high internal work motivation.

Porter and Lawler proposed a model of intrinsic and extrinsic work motivation, which is based on expectancy-valence theory of motivation^[20]. Intrinsic motivation refers to people doing an activity because they find it interesting and derive spontaneous satisfaction from the activity itself. Extrinsic motivation, in contrast, requires an instrumentality between the activity and some separable consequences such as tangible or verbal rewards^[21]. Building on several early experiments, Cognitive Evaluation Theory (CET) was proposed to explain the effects of extrinsic motivators on intrinsic motivation^[22]. However, CET seemed to imply that managers and management theorists would have to focus on one or the other, lack of a systematic and overall processing method. So the usage of CET in many business activities to enhance intrinsic motivation is not always feasible.

On the basis of the prior researches, some scholars presented a differentiated analysis of extrinsic motivation using the concepts of internalization. Their work explains how extrinsically motivated behavior can become autonomous as well as research on individual differences in causality orientations, which led to the formulation of Self-determination Theory (SDT)^[23]. As an empirical theory of human motivation, SDT has been widely used in organizational behavior management in recent years. Some researchers examined motivation in the political domain, assessing participants' intrinsic motivation as well as identified regulation for involvement in an important national referendum^[24]. There are also a lot of researches in the laboratory and in educational settings have tested and validated SDT, for example, Vansteenkiste pointed out intrinsic goals can facilitated autonomous motivation, deep processing, and conceptual learning^[25]. SDT addresses the fundamental motivation questions, namely how behavior is energized and how it is directed, which is suitable to the characteristics of peer-to-peer context in sharing economy. So we take SDT as the fundamental theory of the motivation model in sharing economy.

2.2.2 Salient motivators

As a lot of motivators have been proposed and validated in various contexts by prior scholars, they can be divided into two classes based on the self-determination theory, namely extrinsic motivation and intrinsic motivation. The salient extrinsic motivation validated in related context, including financial benefit, utility, technology capability while some intrinsic motivations studied before can also be applied in our research, such as pro-environmental sense, trust.

Financial benefit is an important determinant of sharing option^[26]. In fact, many recent research contributions have been addressing this topic. Lambertson and Rose find cost benefits of sharing to be a key determinant of usage^[4]. Some scholars emphasize sharing options usually to be cheaper than non-sharing options and consider price consciousness to be a principle determinant of using sharing options^[27].

Utility is found having great influence on individual's sharing decisions and habits in some prior researches. In detail, research focused on the perceived utility of sharing options in contrast to non-sharing options^[4]. Concurrently, utility is a significant factor to conduct illegal file sharing in some exiting studies^[28].

Technology capability becomes an important factor in facilitating usage in the case of car sharing^[29]. In the prior findings, technology capability was referred to be a significant determinant to enable users to locate immediate availability and location of cars belonging to a sharing service in their direct surrounding, to book a car, as well as to display the walking route to these cars^[30].

Pro-environmental sense is illustrated as one important factor of motivation. In times of growing skepticism toward capitalistic structures and anti-consumption movements, the alternative forms of green, ethical or sustainable consumption have been attached with increasing importance^[31]. In particular, Hamari and some other researchers conceptualize ecological sustainable consumption as a salient motivator of the intention to share^[32]. Some findings argued that material required for each episode is reduced, waste is avoided, and overproduction is countered^[26].

Trust is referred to a good feeling, ensuring providers' faith in the reliability of platform and costumers, as well as the impression of security during use or transaction^[33]. Morgan and Hunt theorize that trust is one major predictor of sharing activity^[34]. Thereby, trust is considered to be a significant determinant of choosing sharing options^[35].

Many studies have proven that motivation is of great value to users' participation and behavior in digital platforms, and numerous techniques have been proposed to analyze these motivations^[36]. One of the most difficult challenges of any digital platform of sharing economy is sustaining providers' motivation of sharing things and service. So the Technology Acceptance Model (TAM) will be used to figure out more salient motivators in this context. The motivators in the prior studies can be roughly divided into two categories: organization-based motivations and individual-based motivations. In this paper, we focus on exploring the motivators from the perspective of individual. Social Exchange Theory (SET) indicates that individuals' actions depend on their perceived benefits and costs; the benefits are rewards such as respect, reputation, and tangible incentives. Perceived benefits and costs are one of the most studied motivators of sharing^[37]. Thus, SET is another assistant tool contributes to identifying extra salient motivators in the context of sharing economy.

3. THEORY BACJKGROUND AND FRAMEWORK

There is a mass of theoretic foundations discussing potential determinants of sharing motivation. Most of them argue that in many settings, individuals would clearly be better off from sharing things, space or service with others unless they can gain additional merits from that. However, many individuals still adopt sharing option without extra benefits which against the logic. This phenomenon implies that we should redefine the concept additional merits as well as take some other motivators and theories in related context into account. In the following, Self-determination Theory, Social Exchange Theory and Technology Acceptance Model will be discussed as well as the research framework will be presented.

3.1 Self-determination Theory

The theory focuses on types and particular context, rather than just amount, of motivation, considering autonomous motivation, controlled motivation as predictors of action^[38]. Autonomy involves acting with a sense of volition and having the experience of choice^[39]. In contrast, being controlled involves acting with a sense of pressure, a sense of having to engage in the actions^[40]. Activities that are not intrinsically motivating require extrinsic motivation, so their initial enactment depends upon the perception of a contingency between the behavior and a desired consequence such as implicit approval or tangible rewards. The regulation has been proven in various contexts, such as gymnasts^[41], professional workers^[42] and multi-context^[43], which provides a reference for our research to identify the relationship between different motivators and model the motivation of the user participation in sharing economy.

3.2 Social Exchange Theory

Social exchange theory emphasizes the importance of intrinsic rewards^[44], which is widely used in the context of knowledge sharing to analyze the users' sharing motivation. An individual will behave in a particular way based on the results of his comprehensive consideration of benefits and costs. According to some other economic theories, participants who believe that they will get more extrinsic merits from their behavior, in terms of financial reward, social resource, promotions, appear a more positive attitude and active actions^[45]. However, in SET, the benefits involved in social exchange emphasize unspecified obligations that cannot be quantified in terms of a physical medium of exchange. Therefore, SET tends to explore feelings of personal obligation, self-value, trust, and loyalty, which are related users' motivation in sharing economy.

3.3 Technology Acceptance Model

Nowadays, sharing economy has a great relies on digital platform, which means Internet technology plays an important role in this kind of business model. TAM, the most common model used to model the determinants of users' behavior in the context of e-commerce has been validated in many studies^[36]. To explain a user behavior, two influential beliefs: perceived usefulness (PU) and perceived ease of use (PE) were incorporated in TAM. Both of these influence the individual's attitude toward using a digital platform. Research incorporating intrinsic motivation constructs, such as perceived enjoyment has been conducted. They involved the pleasure and satisfaction derived from performing a behavior^[46], while extrinsic motivation emphasizes performing a behavior to achieve specific goals or rewards.

3.4 Theory framework

Figure 1 displays the theory framework of our research. We identify the motivations in the context of sharing economy in digital platform on the basis of prior studies as well as SET and TAM. Furthermore, we will build the motivation model based on SDT, to present the interaction between different motivations from a systematic perspective.

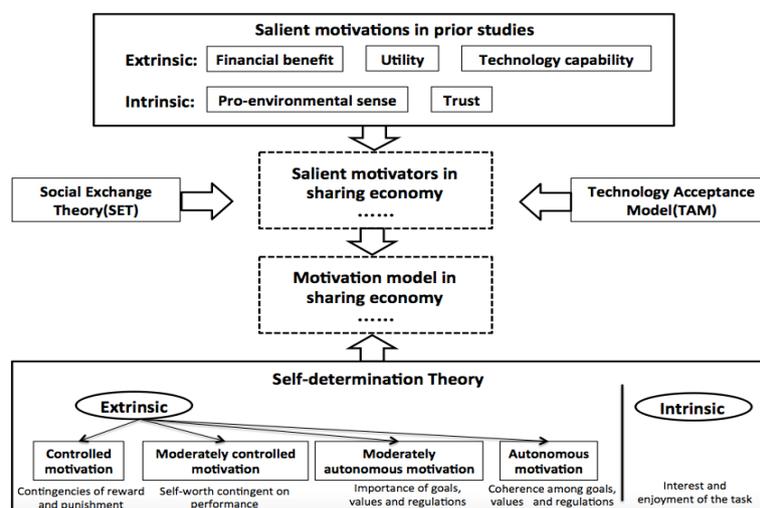


Figure 1. Combined motivation theory framework

4. CASE INTRODUCTION AND DATA COLLECTION

4.1 Case introduction

Car-sharing digital platform, one of the representatives of sharing economy, has recently spread throughout central Chinese cities as well as gain an increasing number of users, including both drivers (who providers car and service through the platform) and passengers (who rent the car and service for a short time through the platform). In our research, a travel digital platform with more than 20 million registered users was chosen as the

study case, namely platform A. It is a synthesis travel digital platform providing various kinds of solutions for transportation, including tailored carrenting, online taxi, and car-sharing service. Since the car-sharing service started from June 2015, in average, there are about 2 million transactions completed in the platform per day. Besides, the number is still appearing an increasing propensity.

A registered driver needs to set the frequent routes and destinations, thus the system can recommend orders according to the settings. Besides, the driver can also receive the order initiatively based on his own position. (Fig. 2) The financial benefit of drivers composes two parts, one is from the customer, a lower price aiming at sharing the fuel and other cost, the other part is the subsidies from the digital platform, which is a common method adopted by nearly all of the travel digital platforms to attract more users. In this business model, transaction is made online while the service is provided offline.

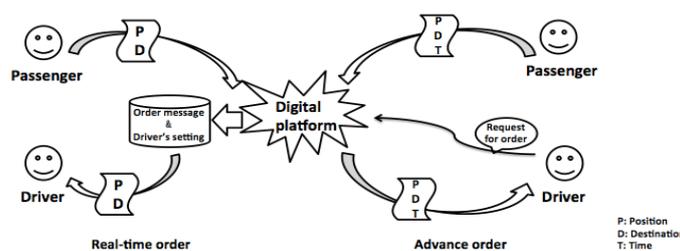


Figure 2. Car-sharing business model

4.2 Data collections

In this research, we interviewed 50 drivers through a car-sharing digital platform. Each of the interviewees is an active user of this cellphone application, with more than 10 times in a month. In order to access a divergent range of users, we choose the drivers aging from 28 to 52 in diverse professional background, such as teacher, programmer, and receptionist, with hierarchic salary level. The interviewers had received professional training to conduct the interview in a free and comfortable atmosphere, which contributes to encouraging interviewees sharing more opinions and personal feelings as well as avoiding yes/no and leading questions. All of these interviews were tape-recorded and fully transcribed into text forms soon afterwards.

Semi-structured interviews were conducted with each driver lasted about 20 minutes, including 16 questions based on our theory framework mentioned in the third section. At the end of each interview, there are two open questions to ask interviewee give a general view of the car-sharing digital platform and some suggestions for how to engage and sustain more people participating sharing economy.

5. CONCLUSION AND FUTURE WORK

After reviewed the related contributions, we can find that there is neither much knowledge about the fact why users engage in sharing economy, sharing their belongs, service and space through digital platform nor why many people are still reluctant to participate in this emerging trend. Our research will extend the user behavior theory and motivation model to the burgeoning context, sharing economy, filling the research gap. What's more, the contributions from our research will enable managers engaged in the management of sharing economy in digital platform in different industries to gain insights into the reasons of usages, furthermore, to strategically manage user relationships and enlarge targeted market.

In the future, we will intend to adopt a qualitative processing method based on the interview results, identifying the motivators of users' sharing option. Secondly, we focus on the salient motivators in this particular context, based on the theory framework mentioned above to propose a motivation model in sharing economy. Finally, we will increase our sample size as well as adopt more cases in different industries to verify the proposed model.

ACKNOWLEDGEMENT

This research was supported by Fundamental Research Funds for the Central Universities in UIBE under Grant 13YQ08.

REFERENCES

- [1] Belk R. (2014). You are what you can access: sharing and collaborative consumption online. *Journal of Business Research*, 67(8): 1595-1600.
- [2] Fine S H. Toward a Theory of Segmentation by Objectives in Social Marketing[J]. *Journal of Consumer Research*, 1980, 7(1):1-13.
- [3] Ozanne LK, Ballantine PW. (2010). Sharing as a form of anti- consumption? An examination of toy library users.*Journal of Consumer Behaviour*, 9(6): 485–498.
- [4] Lamberton CP, Rose RL. (2012). When is ours better than mine? A framework for understanding and altering participation in commercial sharing systems.*Journal of Marketing*, 76(1): 109–125.
- [5] Airbnb. (2014). About us. Available online: www.airbnb.com (last access December 03, 2014).
- [6] Frost, Sullivan (ed). (2010). Sustainable and innovative personal transport solutions—strategic analysis of carsharing market in Europe.
- [7] Jenkins R, Molesworth M, Scullion R. (2014). The messy social live of objects: inter-personal borrowing and the ambiguity of possession and ownership. *Journal of Consumer Behaviour*,13(2): 131–139.
- [8] Belk R. (2007). Why not share rather than own?. *The Annals of the American Academy of Political and Social Science*, 611(1): 126-140
- [9] Jin J, Li Y, Zhong X, Zhai L. (2015). Why users contribute knowledge to online communities? an empirical study of an online social q&a community. *Information & Management*, 52(7): 840-849.
- [10] Hsu C L, Lin CC. (2008). Acceptance of blog usage: the roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management*, 45(1): 65–74.
- [11] Cusumano M A. (2014). How traditional firms must compete in the sharing economy. *Communications of the ACM* 58, 32-34.
- [12] Firnkorn J, Müller M. (2011). What will be the environmental effects of new free-floating car-sharing systems? the case of car2go in ulm. *Ecological Economics*, 70(8): 1519-1528.
- [13] Chris J. (2015). The sharing economy: a pathway to sustainability or a new nightmarish form of neoliberalism?.*Ecological Indicators*, 121(1): 149-159.
- [14] Weber T A. (2014). Intermediation in a sharing economy: insurance, moral hazard, and rent extraction. *Journal of Management Information Systems*, 31(3): 35-71.
- [15] Gansky L. (2012). The mesh: why the future of business is sharing. *Portfolio*, 2012.
- [16] Möhlmann M. (2015). Collaborative consumption: determinants of satisfaction and the likelihood of using a sharing economy option again. *Journal of Consumer Behaviour*, 14(3): 193-207.
- [17] Maslow A H. (1954).*Motivation and personality*. New York: Harper & Row.
- [18] Herzberg F. (1968). One more time: how do you motivate employees? *Harvard Business Review*, 46, 53–62.
- [19] HackmanJ R, Oldham G R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.
- [20] Vroom V H. (1964). *Work and motivation*. New York: Wiley.
- [21] PorterL W, Lawler EE. III. (1968). *Managerial attitudes and performance*. Homewood, IL: Irwin-Dorsey.
- [22] Deci E L. (1976).Notes on the theory and metatheory of intrinsic motivation. *Organizational Behavior and Human Performance*, 15(1): 130–145.
- [23] Deci E L, Ryan R M. (2000). The ‘what’ and ‘why’ of goal pursuits: human needs and the self-determination of behavior. *Psychological Inquiry*, 11(1): 227–268.

- [24] Koestner R, Losier G F, Vallerand R J, Carducci D. (1996). Identified and introjected forms of political internalization: extending self-determination theory. *Journal of Personality and Social Psychology*, 70(1): 1025–1036.
- [25] Vansteenkiste M, Simons J, Lens W, Sheldon K M, Deci E L. (2004). Motivating learning, performance, and persistence: the synergistic effects of intrinsic goal contents and autonomy-supportive contexts. *Journal of Personality and Social Psychology*, 87(1): 246–260.
- [26] Mont O. (2004). Institutionalization of sustainable consumption patterns based on shared use. *Ecological Economics*, 50(1-2): 135–153.
- [27] Moeller S, Wittkowski K. (2010). The burdens of ownership: reasons for preferring renting. *Managing Service Quality*, 20(2): 176–191.
- [28] Hennigthureau T, Henning V, Sattler H. (2007). Consumer file sharing of motion pictures. *Journal of Marketing A Quarterly Publication of the American Marketing Association*, 71(4):1-18.
- [29] Frost, Sullivan (ed). (2010). Sustainable and innovative personal transport solutions—strategic analysis of carsharing market in Europe. Available online: www.frost.com.
- [30] car2go. (2014). Available online: www.car2go.com.
- [31] Kozinets RV, Handelman JM. (2004). Adversaries of consumption: consumer movements, activism, and ideology. *Journal of Consumer Research*, 31(1): 691–704.
- [32] Hamari J, Sjöklint M, Ukkonen A. (2013). The sharing economy: why people participate in collaborative consumption. Available online: papers.ssrn.com.
- [33] Wirtz J, Lwin MO. (2009). Regulatory focus theory, trust, and privacy concern. *Journal of Service Research*, 12(2): 190–207.
- [34] Morgan RM, Hunt SD. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(1): 20–38.
- [35] Botsman R, Rogers R. (2010). What's mine is yours—the rise of collaborative consumption. HarperCollins: NY.
- [36] Teo T S H, Lim V K G, Lai R Y C. (1999). Intrinsic and extrinsic motivation in internet usage. *Omega*, 27(1): 25–37.
- [37] Wang S, Noe R A. (2010). Knowledge sharing: a review and directions for future research. *Human Resource Management Review*, 20(2): 115–131.
- [38] Deci E L, Ryan R M. (2008). Self-determination theory: a macrotheory of human motivation, development, and health. *Canadian Psychology*, 49(3): 182-185.
- [39] Haworth L. (1991). Dworkin on autonomy: the theory and practice of autonomy. *geraldworkin. Ethics*, 102(1).
- [40] Gagné M, Deci E L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, 26(4): 331–362.
- [41] Gagné M, Ryan R M, Bargmann K. (2003). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *Journal of Applied Sport Psychology*, 15(1): 372–390.
- [42] Kanfer R, Ackerman P L. (2004). Aging, adult development, and work motivation. *Academy of Management Review*, 29(1): 440–458.
- [43] Kehr H M. (2004). Integrating implicit motives, explicit motives, and perceived abilities: the compensatory model of work motivation and volition. *Academy of Management Review*, 29(1): 479–499.
- [44] Liu C C, Chen S Y. (2005). Determinants of knowledge sharing of e-learners. *International Journal of Innovation and Learning*, 4(4): 434-445.
- [45] Bock G W, Kim Y G. (2002). Breaking the myths of rewards: an exploratory study of attitudes about knowledge sharing. *Information Resources Management Journal*, 15(2): 14-21.
- [46] Doll J, Ajzen I. (1992). Accessibility and stability of predictors in the theory of planned behavior. *Journal of Personality & Social Psychology*, 63(5): 754-765.