

Chapter

Why Knowledge Sharing Increases Well-being - The Case of Adult Fans of LEGO

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Abstract

Since 2020, we have faced drastic changes in our lives due to the pandemic. This caused a big paradigm shift in working styles. Parallel careers or multiple jobs are getting more common, and people are ascertaining their own competencies. The utilization of personal knowledge will continue to accelerate and this study sheds light on its societal value; the other side of sharing economy. Aoki (2021) revealed that participation in knowledge sharing has a significant positive impact on contributors' well-being. Those findings are more pertinent as utilization of personal knowledge increases under the ongoing paradigm shift in work style, and the expansion of C-to-C business. However, the reason for the correlation between knowledge sharing and well-being has not been identified. Thus, this study explores this issue by carefully examining knowledge-sharing contributors and their experiences. Finally, this study finds that contributors increased their well-being by deepening their knowledge and experience via competitive co-creation. Furthermore, their concerns shifted towards passing on their knowledge and experience to the next generation. Stakeholders of this study's results are those who utilize personal knowledge. For example, policymakers who wish to shed light on people with hidden potential, managers of knowledge-sharing platforms, such as crowdsourcing, marketing managers who collaborate with consumers, employers who wish to motivate their employees, and so on.

Keywords: user innovation, co-creation, social welfare, positive psychology, PERMA

1. Introduction

Since 2020, we have faced drastic changes in our lives due to the pandemic. This caused a big paradigm shift in working styles. Parallel careers or multiple jobs are getting more common, and people are ascertaining their own competencies. The utilization of personal knowledge will continue to accelerate and this study sheds light on its societal value.

Aoki [1] revealed that participation in knowledge sharing has a significant positive impact on contributors' well-being. Those findings are more pertinent as utilization of personal knowledge increases under the ongoing paradigm shift in work style, and the expansion of C-to-C business. However, the reason for the correlation between knowledge sharing and well-being has not been identified. This research aims to reveal the relationship between knowledge sharing and well-being.

Due to the growing sharing economy and the large ongoing paradigm shift in work styles caused by the pandemic, people have more opportunities to utilize their personal knowledge than ever before. However, vast amounts of personal knowledge are untapped. For instance, one instantiation of personal knowledge is user innovation, and user innovation research has pointed out the ‘market failure’ in its diffusion due to a lack of incentives for the innovators [2, 3]. This study contributes to increase knowledge sharing and filling the gap between personal knowledge and society.

1.1 User innovation and social welfare

Since von Hippel [4] pointed out that not only manufacturers but also ‘users’ innovate, user innovation has been studied by various researchers throughout the world. In early research, the term ‘users’ referred to firms that were supplied products by manufacturers; in other words, user innovation was carried out in the business-to-business community. Over the decades, the importance of individual consumers as user innovators has been articulated (e.g. [5]). In this digital era, the line between a firm and a consumer is becoming blurred, and co-creation between the two has become pervasive.

Some users innovate by themselves and whose innovations occasionally have been commercially successful. Previous studies showed that user innovations increased social welfare because user innovators created financial value from their leisure-time activities [6, 7]. Furthermore, user innovation is distinct from producer innovation in that the former provides benefits from participation, including the use or sale of the output to the innovators themselves [6, 8]. Consequently, user innovation which brings satisfaction to the innovators increases social welfare better than producer innovation.

1.2 Diffusion of user innovation

Even if it has a high potential to enhance social welfare, user innovation tends to be restricted to innovators themselves and not diffused. User innovators are likely to choose free information diffusion, rather than paid diffusion, and avoid seeking commercialization on their own or through an existing firm, because it costs more than they would gain. Earlier studies have shown ‘market failure’ in user innovation diffusion [2, 3]. When valuable innovation remains underground, it is society’s loss.

Each user innovation is based on personal needs, which, by nature, are self-centered. Thus, innovation communities play an important role in integrating these isolated individuals [5]. Baldwin et al. [9] revealed that user innovators who commercialized their innovations had participated in innovation communities at an earlier stage and improved their ideas. Earlier research has shown that user communities play an important role in diffusing user innovations and has examined the innovators’ motivations to participate in these communities.

People tend to join peer communities (e.g., open-source software communities) to fulfill personal needs. Then, their participation becomes a hobby, and they discover that they are helping other people [10]. In addition to personal needs, feedback from peers and enjoyment were found to be important motivations [11–14]. Feedback in the user community also plays a key role in increasing entrepreneurship [10, 15].

1.3 Knowledge sharing and well-being

Diffusion of user innovation is ultimate knowledge sharing and contributors enjoy financial and/or non-financial benefits from sharing. Aoki [1] focused on non-financial benefits and revealed that knowledge sharing increases contributors’ well-being.

In terms of psychology, Seligman [16] defined well-being as the ultimate objective of positive psychology. He argued that well-being is sustainable and separate from ‘happiness’ and suggested the importance of flourishing as a standard to measure well-being. Flourishing consists of five elements, positive emotion, engagement, relationship, meaning, accomplishment, or PERMA for short [16]. Each element represents the following.

- Positive emotion: a subjective feeling of well-being itself
- Engagement: a subjective feeling denoting the extent to which people are absorbed in something
- Relationships with others
- Meaning: the extent how lives are meaningful for themselves
- Accomplishment, the extent how people accomplish something in their lives

Aoki [1] visualized non-financial benefits from knowledge sharing with the measurement of PERMA which was developed by Butler and Kern [17] and have been used to explain the relationship between well-being and a continuous process such as career [18], education [19, 20], and hobby [21]. Although this is an important finding, the cause has not yet been revealed. Thus, this research explores why knowledge sharing increases well-being. In line with Aoki [1], this research follows Seligman’s definition of well-being and adopts PERMA to examine the changes in well-being that knowledge sharing contributors’ experience.

2. Method and data

2.1 The case: Adult fan of LEGO

To answer the research question, in-depth interviews with the knowledge-sharing contributors were conducted. The interviewees were sourced from LEGO users who share their original creations. The LEGO Group, one of the world’s largest toy manufacturers, was founded in 1932. The brick in its present form was launched in 1958 and has attracted people for over 60 years. LEGO has a lot of adult fans across the world who call themselves AFOL (Adult Fan of LEGO). The LEGO Group has collaborated with these users with novel ideas for decades and much research has revealed the competitive advantages of this collaboration (e.g. [22–26]). Antorini, Muñiz and Askildsen [11] pointed out that the relationship among community members is the strongest motivation for contributors to co-creation with LEGO.

Co-creation among LEGO and its users varies from new product development to programming. Furthermore, users frequently share ideas, some of which are quite new beyond the brand’s intention. This research examines how such knowledge sharing affects contributors themselves. This research distinguishes itself from previous research mainly in two aspects. First, this research observes changes in contributors not one specific point but over time. Second, this research shed light to not firms but contributors.

2.2 Sample and data

The interview respondents were selected using the following criteria: who share the idea related to LEGO with other people in some form. The interviews reached

theoretical saturation with ten respondents. The primary respondent activity was sorted into three groups as follows.

- A. Artistic photography of LEGO in scenic environments (n = 4).
- B. Designing and creating original crafts with LEGO blocks (n = 4).
- C. Programming original LEGO Mindstorms crafts (n = 2).

Their activities were user-generated beyond the firm's original aim. Group A especially, as they go out of their homes with LEGO blocks and/or mini-figures, and enjoy sharing with other people through SNS. These activities were not expected by the firm; however, they have become worldwide trends among LEGO users.

The one-to-one semi-structured interviews covered the beginning of LEGO, current occasion to use, purchase situations, and the relationship with the user community and the firm. The interviews were conducted between September 2020 and February 2021, and each interview lasted 30–120 min (average 59 min).

2.3 Analysis

To structurally understand chronological changes in the respondents, the data were analyzed using the Grounded theory approach (GTA) [27]. In line with other marketing research (e.g., [28–30]), this chapter follows the Strauss approach (e.g. [31]). All interviews were transcribed and applied the scheme of open, axial coding converging into theory as follows [32]:

1. breaking down data into manageable analytic pieces.
2. brainstorming with data to arrive at possible meanings and delineate the concepts (open coding).
3. elaborating concepts to form categories (axial coding).
4. integrating categories into a core category and other categories.
5. analyzing data for context.

The data were analyzed (first and second steps) after each interview, and data collecting and analysis were continued until reaching theoretical saturation. The concepts in open coding were based on the actual language respondents used. Then, the concepts were grouped into categories based on theoretical abstracts in axial coding. For analyst triangulation, the coding results were reviewed by the marketing researcher and two of the interview respondents; and the theory was constructed objectively via the reviewers' feedback. Finally, the categories were referred to PERMA [16] to observe the relationship between knowledge sharing and well-being.

3. Results

3.1 Seven categories extracted from GTA analysis

Through the process of coding, 22 first-order categories were distilled from 67 concepts and consequently converged into the seven second-order categories

ending with the two core categories below (**Table 1**). The results are described below for each second-order category.

A. Formative LEGO experience. Each respondent had a LEGO experience in their childhood provided by their parents. They habitually played with LEGO and remembered physically clicking blocks, which is the predominant feature of LEGO. As they grew, they stopped playing with LEGO, getting tired of creating with the same blocks. Most respondents were not given enough LEGO blocks, they felt unsatisfied wanting more.

B. Renewed LEGO experience. After a while, sometimes more than 10 years later, the respondents rekindled their interest in LEGO for various reasons.

	First-order categories	Seligman [16]	Second-order categories
1	Childhood experiences		A) Formative LEGO experience
2	Superiority of LEGO blocks	Positive emotion	
3	Restart using LEGO	Positive emotion	B) Renewed LEGO experience
4	Exposed to new playing styles via the internet	Positive emotion	
7	Absorbed in creating	Engagement	C) Absorption in LEGO
8	Being an extension of oneself	Engagement	
9	Huge expenditure		
5	Self-recognition of developing creativity	Engagement	D) Satisfaction of intellectual curiosities
6	Knowledge transformation	Meaning	
10	Goal representative of ideals	Meaning	E) Goal setting and hardships to reach the achievement
11	Hurdles to reach achievement		
12	Collaboration with peers	Relationship	F) Deepening of knowledge and experiences via competitive co-creation (core category)
13	Deep communication	Relationship	
14	Opportunities for feedback	Accomplishment	
15	Existence of more experienced people		
16	Objective judgment of one's own works	Meaning	
17	Recognition from third parties	Accomplishment	
18	Collaborative relations with LEGO	Relationship	
19	Interests and comprehension of brand mission	Meaning	
20	Social engagement via LEGO	Meaning	G) Passing on knowledge and experience to the next generation (core category)
21	Awareness of salient issues	Meaning	
22	Altruism	Meaning	

Table 1.
 GTA results.

In contrast to their childhood, they purchased LEGO blocks by themselves and found plenty of product lines that were new to them. Furthermore, they enjoyed posting their creations on SNS, a novel experience since their childhood.

“When I introduced my creation on YouTube, overseas people visited my channel.”

“I posted my creations to Twitter and also saw others’ creations. Then, I began communicating with other LEGO users.”

C. Absorption in LEGO. When getting back into LEGO, the respondents were first absorbed in creating. Each of them had something to express through LEGO, which they felt was an extension of their body and a method for expression.

“When I am deeply moved by something, such as a movie or music, I’d like to express it. LEGO is one option to do so.”

They found themselves spending a lot of time and money as the product lines fired up their enthusiasm for collecting.

“I want more of these parts, also those transparent ones, it has become like a collection. I felt it’s dangerous, but I really like LEGO.”

D. Satisfaction of intellectual curiosities. The respondents experienced the advantages of LEGO which increased their creativity; they could repeat trial and error. The simplicity of combining the blocks provided equal opportunities for competition.

“It is not dependent on cutting or pasting, painting or gluing skills, thus it only depends on ideas; how to express them. Even adults and children can compete equally. That’s very interesting.”

Moreover, the restrictive regulations of colors and shapes promoted their creativity. The author found that AFOLs usually purchase sets to collect parts necessary for their creations. In other words, they do not follow the official instructions but made original creations using blocks collected from various sources. Furthermore, each respondent is a specialist in a field of their LEGO creations, for example, graphic design or photography. Their LEGO creations inspired them with their specialties, and they recognized this synergy.

“While enjoying LEGO, I also enjoy designing!”

E. Goal setting and hardships reaching achievements. Each respondent has a theme and ideal for their creations. They take advantage of their own strengths to pursue originality.

“My work affords me opportunities to travel, so I thought I could create my own worldview using Instagram... if I simply do the same as others, my work would remain in obscurity.”

Though they aim to entertain others in addition to their own enjoyment, they face some hardships. First, realizing their ideas is not only fun but quite challenging. Furthermore, all respondents mentioned the high cost of LEGO. Some

respondents do not purchase official sets, but individual authentic blocks from overseas through unofficial channels, which needs know-how.

“The transactions are all in English. Troubles sometimes happen due to consumer-to-consumer business. It needs experience and know-how. It is difficult for non-fans to understand the proper process and the motivation.”

F. Deepening of knowledge and experiences via competitive co-creation (core category). AFOLs collaborate to enhance the quality of their creations and even share information about how to acquire certain blocks. They show their creations and provide feedback to each other, which motivates them and accelerates future creations.

“The events are like exhibitions and people bring their creations. We show our best creations, praise each other, and improve ourselves through friendly rivalry.”

Experiencing success in contests or recognizing well-known people in their community enthused the respondents to further create.

Importantly, the LEGO group assists those collaborative relationships. The firm officially recognizes such user communities worldwide as LEGO User Group (LUG). While LUGs contribute to diffusing LEGO, the firm supports its activities. Some respondents belong to LUGs and have indirect collaborative relationships with the firm, whereas some are more directly related to the firm such as by collaborating in new product development.

In summary, AFOLs compete with each other in creating, and such competition increases their motivation. Thus their relationships are co-creative overall. The balance between competition and co-creation enriches the respondents' knowledge and experiences. Furthermore, it broadens their opportunities beyond LEGO creations.

“I started to like photos related to LEGO, then decided to major in photography in university. Now I'm interested in cameras and want to make a living shooting photos.”

G. Passing on knowledge and experience to the next generation (core category). The respondents eventually received job requests from outside their communities as a result of their LEGO creations. These jobs were not only for additional LEGO creations, but also for writing books about LEGO, lecturing at LEGO schools for children, and so on. The job requests were from both LEGO itself and third parties, from both inside and outside of Japan. Some respondents accepted those jobs as an extension of their hobby, while others did so as a side business. Furthermore, such jobs became the main source of income for some respondents.

“Recently, job requests related to LEGO have increased and even become my primary source of income.”

As a hobby or as a source of income, the respondents commonly expanded their fields through LEGO activities and expanded their connection to society.

Moreover, some respondents eagerly passed on their experiences, which was deeply satisfying. Particularly, they were passionate about developing children's creativities and tried to do so by holding events, establishing websites, and so on.

“I want children to enjoy creating as I did in my childhood. And I'd like to escalate that exciting feeling within them. That is why I held a LEGO creation contest.”

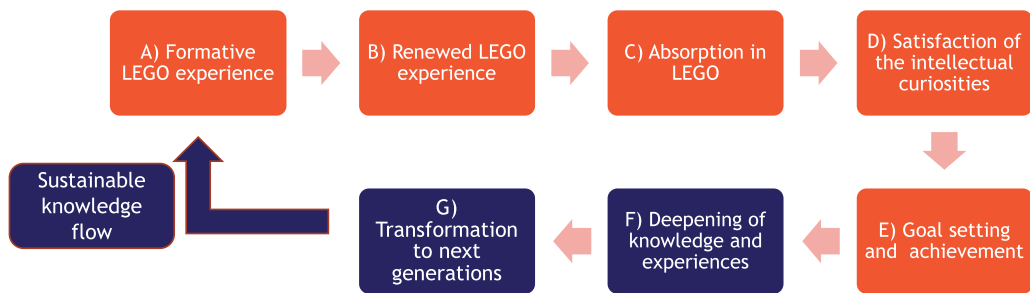


Figure 1.
The flow of knowledge sharing.

Referring to their beliefs, they tended to be unsatisfied with current product lines and contemporary trends in society which spoils children’s creativity.

“Children today don’t repeat building and destroying. They don’t make an airplane from a ‘police station’ set, but simply purchase an ‘airplane’ set.”

3.2 Matching for the PERMA model

The author finally matched the first-order categories to the PERMA model [16], where appropriate, to observe undergoing changes in the respondents (**Table 1**). The respondents started their experience with a ‘positive emotion,’ such as fun, then fell into absorption (‘engagement’). Then, they recognized the meaning of investing their cultivated knowledge into their creations and their ideals (‘meaning’). In the process of achieving their goals, they shared their knowledge with their peers (‘relationship’) and felt a sense of ‘accomplishment’ via competition and recognition. Finally, most were motivated to be altruistic (higher level of ‘meaning’) in the form of knowledge flow to the next generation. Four of the categories do not match PERMA elements but influenced the PERMA outcome. For example, experience in childhood includes unsatisfied feelings but it increases the respondents’ absorption in adulthood.

3.3 Findings

As a result, it was proven that the flow of knowledge sharing is circular while increasing contributors well-being (**Figure 1**). The respondents had accumulated knowledge and experience with LEGO since their childhood (A). They then found a renewed attraction to LEGO and became reabsorbed in it in their adulthood (B&C). They enjoyed applying their non-LEGO knowledge to their LEGO creations and realizing that it was developing their creativity (D). Sooner after, they each set their own goal which represented their ideal, but there were obstacles (E). To overcome those obstacles, they developed their skills and ideas by collaborating with other users, sometimes competing with them, which resulted in a deepening of their knowledge and experience (F). After reaching their achievements, most respondents were motivated to pass on their experiences to the next generation.

4. Conclusions and implications

This study concludes that the reason for knowledge sharing increases contributors well-being is that it further deepens their knowledge and experience. The respondents could further deepen their previously accumulated knowledge and experience with LEGO creation through competitive co-creation with others.

Moreover, regardless of their initial goals, they converged into the broader goal of knowledge flow to the next generation which, importantly, contributes to the realization of sustainability in knowledge development.

This study demonstrates the importance of competitive co-creation with individuals utilizing personal knowledge. This personal knowledge is not necessarily related to their work or major, but rather their outside interests which were accumulated over a longer span. A marriage of diversified ideas could be the resource for innovative ideas.

The COVID-19 pandemic has restricted the flow of people and goods, but owing to the internet, not knowledge. Activation of knowledge sharing increases people's well-being and social welfare.

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References

- [1] Aoki K. The relationship between well-being and knowledge sharing. *Sustainability*. 2021;**13**(9):4978
- [2] de Jong J, von Hippel E, Gault F, Kuusisto J, Raasch C. Market failure in the diffusion of consumer-developed innovations: Patterns in Finland. *Research Policy*. 2015;**44**(10):1856-1865
- [3] von Hippel E, DeMonaco HJ, de Jong JPJ. Market failure in the diffusion of user innovations: The case of 'Off-Label' innovations by medical clinicians. *Science and Public Policy*. 2017;**44**(1): 121-131
- [4] von Hippel E. The dominant role of users in the scientific instrument innovation process. *Research Policy*. 1976;**5**(3):212-239
- [5] von Hippel E. *Democratizing Innovation*. Cambridge, MA: MIT Press; 2005
- [6] Gambardella A, Raasch C, von Hippel E. The user innovation paradigm: Impacts on markets and welfare. *Management Science*. 2016;**63**(5):1450-1468
- [7] Raasch C, von Hippel E. *Amplifying User and Producer Innovation: The Power of Participation Motives*. London: Routledge; 2015. pp. 284-309
- [8] Hienerth C, von Hippel E, Jensen MB. User community vs. producer innovation development efficiency: A first empirical study. *Research Policy*. 2014a;**43**(1):190-201
- [9] Baldwin C, Hienerth C, Von Hippel E. How user innovations become commercial products: A theoretical investigation and case study. *Research Policy*. 2006;**35**(9):1291-1313
- [10] Shah SK, Tripsas M. The accidental entrepreneur: The emergent and collective process of user entrepreneurship. *Strategic Entrepreneurship Journal*. 2007;**1**(1-2):123-140
- [11] Antorini YM, Muñoz AM Jr, Askildsen T. Collaborating with customer communities: Lessons from the LEGO group. *MIT Sloan Management Review*. 2012;**53**(3):73-79
- [12] Füller J. Refining virtual co-creation from a consumer perspective. *California Management Review*. 2010;**52**(2):97-122
- [13] Janzik L, Raasch C. Online communities in mature markets: Why join, why innovate, why share? *International Journal of Innovation Management*. 2011;**15**(4):797-836
- [14] Ogawa S, Pongtanalert K. Exploring characteristics and motives of consumer innovators: Community innovators vs. independent innovators. *Research-Technology Management*. 2013;**56**(3): 41-48
- [15] Halbinger MA. The role of makerspaces in supporting consumer innovation and diffusion: An empirical analysis. *Research Policy*. 2018;**47**(10):2028-2036
- [16] Seligman MEP. *Flourish: A Visionary New Understanding of Happiness and Well-being*. New York: Free Press; 2011
- [17] Butler J, Kern ML. The PERMA-Profiler: A brief multidimensional measure of flourishing. *International Journal of Wellbeing*. 2016;**6**(3):1-48
- [18] Ascenso S, Perkins R, Williamson A. Resounding meaning: A PERMA wellbeing profile of classical musicians. *Frontiers in Psychology*. 2018;**9**:1895
- [19] Lee J, Krause AE, Davidson JW. The PERMA well-being model and music

facilitation practice: Preliminary documentation for well-being through music provision in Australian schools. *Research Studies in Music Education*. 2017;**39**(1):73-89

[20] Tansey TN, Smedema S, Umucu E, Iwanaga K, Wu JR, Cardoso EDS, et al. Assessing college life adjustment of students with disabilities: Application of the PERMA framework. *Rehabilitation Counseling Bulletin*. 2018;**61**(3):131-142

[21] Doyle JP, Filo K, Lock D, Funk DC, McDonald H. Exploring PERMA in spectator sport: Applying positive psychology to examine the individual-level benefits of sport consumption. *Sport Management Review*. 2016;**19**(5): 506-519

[22] Hiennerth C, Lettl C, Keinz P. Synergies among producer firms, lead users, and user communities: The case of the LEGO producer–user ecosystem. *Journal of Product Innovation Management*. 2014b;**31**(4):848-866

[23] Jensen MB, Hiennerth C, Lettl C. Forecasting the commercial attractiveness of user-generated designs using online data: An empirical study within the LEGO user community. *Journal of Product Innovation Management*. 2014;**31**:75-93

[24] Lauwaert M. Playing outside the box–on LEGO toys and the changing world of construction play. *History and Technology*. 2008;**24**(3):221-237

[25] Prahalad CK, Ramaswamy V. *The Future of Competition: Co-creating Unique Value with Customers*. Cambridge, MA: Harvard Business Press; 2004

[26] Schlagwein D, Bjorn-Andersen N. Organizational learning with crowdsourcing: The revelatory case of LEGO. *Journal of the Association for Information Systems*. 2014;**15**(11):3

[27] Glaser B, Strauss A. *The Discovery of Grounded Theory*. Chicago: Aldine; 1967

[28] Batra R, Ahuvia A, Bagozzi RP. Brand love. *Journal of Marketing*. 2012;**76**(2):1-16

[29] Gebhardt GF, Carpenter GS, Sherry JF Jr. Creating a market orientation: A longitudinal, multifirm, grounded analysis of cultural transformation. *Journal of Marketing*. 2006;**70**(4):37-55

[30] Homburg C, Jozić D, Kuehnl C. Customer experience management: Toward implementing an evolving marketing concept. *Journal of the Academy of Marketing Science*. 2017;**45**(3):377-401

[31] Strauss AL, Corbin JM. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Newbury Park: Sage Publications; 1998

[32] Corbin J, Strauss A. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Los Angeles, CA: Sage Publications; 2014