

Kids Design Association Japan: Regulating and Promoting Children Oriented Design Practices in Japan

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Abstract

Different associations are important for regulating and promoting good practices of sustainable product development. On the case of children products, there are many considerations to take, such as mental and physical development or safety. Knowing this broad challenge, how can associations better aid on the development of Design Guidelines for children? In Japan, the country's context and challenges have led to the development of the Kids Design Association, or KDA, a Non-Profit organization dedicated on the achievement of three missions: "Contribute to children's safety"; "Develop children's capabilities, encouraging creativity and sensitivity"; and "Support caregivers during pregnancy, birth and child raising". Based on an investigation period, the following paper is a case study of the Kids Design Association, exposing its story, goals, relation with society, growth, and performed activities, especially the "Kids Design Award", a commendation program for acknowledging design practices that takes children needs and standpoints in consideration. We aimed to observe design trends and challenges regarding both Japanese Society and the association. As results, although some of the procedures are oriented exclusively for Japan, we found that the KDA approach could effectively bridge companies with academic knowledge and social demands.

Keywords: Non-Profit organization, Design guidelines, Children, Industry, Society, Japan.

Evident since the 19th century, Industrial associations play a role for regulating and promoting good practices for the sustainable development of products. According to Dimaggio & Powell (1983) they are pressure agents that define socially acceptable conduct to firms in the same organizational field and that tend to cause firms to exhibit similar practices and activities. More focused on the social causes, however, nonprofit organizations (NPO) are organizations that are formed by a group of people in order "to pursue a common not-for-profit goal" (Hartigan, 2006). A NPO is often dedicated to furthering a social cause or advocate a point of view.

Considering the range of fields where industrial and NPO associations act, this paper initially focused on the children's products and services, on how they are regulated and which

guidelines they may have. children differ from grownups as they have special development needs that are constantly changing and affecting their ways of understanding the world (Hughes, 2009).

Therefore, children-oriented associations must dedicate special attention for their needs and healthy development. When we looked at children-related associations around the world, we categorized three main types of associations:

- **Policy making:** develops policies to improve children lives, ensure their rights and space in society (e.g. Kids Right Foundation, US, 2003; Association for Young Children Europe, 2012);
- **Industrial:** Focus on strengthening markets for children-related products and services (e.g. Japan Toy Association, 1967, Federation of the European Play Industry, 2013);
- **Design related:** focus on awarding products related with the industry or trade fairs (e.g. Kind & Jugend Kids Design Award, Germany, 2016) or on spreading design-based knowledge to children (e.g. Kids Design Collaborative, US, 2014).

Having a broad series of goals regarding children, their relationship with products, environment, and society, we found a Japanese organization named 'Kids Design Association' (KDA, 2017) to have a unique actuation model. Founded on 2006 as an association of companies, doctors, and research institutes, KDA is a Non-Profit organization aimed to stay in the center of industrial interest, social demands, policy making, and design regulations, finding on that position a possibility to mediate interests and contribute to a better future for children. This is represented through the Kids Design Award, an awarding process that recognizes products and services of all natures, as long as they are created while considering children's needs or standpoints.

On this paper, we are going to perform an investigative case study of the Kids Design Association and their awarding process. While considering that KDA was instituted with Japanese society in mind, we are questioning if its model can be applicable and beneficial to different societies around the world.

Research Methods

The current research intended to investigate the Kids Design Association model, history, goals, relationship with society and activities. For achieving this analysis, we performed a case study of the association. As according to Yin (2015), Case studies are considered adequate in situations where the available knowledge regarding a study topic is limited, requiring in depth investigations about the phenomenon in its own environments. Since the association action model is notably different from other found children associations, a thoughtful investigation of its model was necessary.

Due to the importance of the Kids Design award for the association, this paper will be divided in two main parts. The first part will introduce the association history and discuss its relationship with Japanese Society. Afterwards it will investigate the Kids Design Award

processes and reports. Based on an experience period, we gathered data through three main sources:

- Available institutional material of the association and its activities on the past 3 years, including flyers, year reports, awarded products books, developed researches and design tools. The materials were carefully translated from Japanese to English language;
- Semi-structured Interviews with association members; and
- Direct observation of the Kids Design Award 2016 and 2017, analyzing the submission and evaluation processes, as well as the awards and reports.

Kids Design Association - History and Goals

“The kids design Association is a non-profit organization (NPO) aimed to contribute on creating a social environment that leads to the healthy growth and development of children, who make up the next generation” (Kids Design Association, 2017). The association is supported by members consisting of varied companies, organizations, research institutes, and local governments, with a small secretariat office conducting activities that widely publicize and disseminate the following three design missions:

- Contribute to children’s safety;
- Develop children’s capabilities, encouraging creativity and sensitivity;
- Support caregivers during pregnancy, birth and child raising.

Founded on 2006, KDA started as an association of companies, doctors, and research groups, who observed an increase in accidents involving infants. With the most impactful case happening on 2004, when one infant was involved in an automatic revolving door accident (Japan Times, 2004), They observed that most of these accidents often happened because the environment was not suitable or didn’t take children into consideration on their designs. Observable on table 1, and being this a matter of public interest, the situation gave importance for the association foundation, supporting its first Design mission “Contribute to children’s safety”. This mission is not limited to children-related products, but focuses on universal design and accessibility notions, encouraging designs that considers the possible use of children, remaining safe for everyone to use.

Table 1: Infant Deaths of Japan on Year 2012 by age and causes (Number of deaths).

Adapted from: Minister of Health, Labour and Welfare, 2012

Age	No.1	No. 2	No. 3	No. 4	No. 5
1 to 4 (877)	Congenital Anomalies (180)	Unintentional Injury (123)	Malignant neoplasm (101)	Heart disease (58)	pneumonia (49)
5 to 9 (497)	Unintentional Injury (103)	Malignant neoplasm (84)	Congenital Anomalies (35)	other neoplasm (32)	pneumonia (28)
10 to 14 (509)	Malignant neoplasm (111)	Unintentional Injury (95)	Suicide (75)	Heart disease (26)	Cerebrovascular; pneumonia (18)
1 to14 (1883)	Unintentional Injury (321)	Malignant neoplasm (296)	Congenital Anomalies (227)	Heart Disease (108)	Pneumonia (95)

According to the Japan Toy Association (2017), More than 80 percent of Japanese customers focus on product safety when buying a toy. However, another buying criteria include promoting the child's mental and educational development. This perception of how products can affect positively children's development influenced the association's second design mission "Develop children's capabilities, encouraging creativity and sensitivity". Under this mission, the association seeks not only products but also services that can be educative or allow children to explore possibilities such as toys, games or workshops.

Before the association establishment, on 2005, Japan faced its first decrease of birthrate, a problem that is still one of the country's main challenges for the future (Japan Times, 2016). Faced with that, the association established its third design mission "Support caregivers during pregnancy, birth and child raising". Under this mission, the association seeks to encourage the creation of products, services, policies or social systems that can ease the task of raising children, such as the establishment of nursing centers and better policies for work life and parenthood.

As Japanese society advances and face new challenges, we can see that the weight given to each of its 3 design missions are constantly changing. Below we can look on the association newest manifesto, released on 2017:

Kids Design Association sense society's movement to provide open innovation with all types of stakeholders and make our future continuous and bright. Under our three missions, we intend to:

- Help balancing parenting and work, to accomplish a joyful parenthood experience;
- Take actions for enriching the parent's time spent with children;
- Make the access of the information about parenting easier and more understandable;
- Make a better environment for parents to spend time with your children outside home, wherever and whenever they go;
- Design environments for parents to share experience and communicate with each other;
- Promote the importance of communities that supports parenting;
- Increase opportunities for local youth and elders to interact with children;
- Research, develop, and apply changes regarding play and learning;
- Create opportunities for children to voluntarily and continuously experience more;
- Try our best to reduce accidents involving children to zero."

By observing the association's manifesto, we can see how the balance developed from its 3 original missions. With birth rate being a grave issue for the country today, the first 7 items of the list regard the caregiver's third mission, followed by 2 compromises related with the "develop children capabilities" mission and only one item dedicated to "Children safety". One explanation comes from the establishment of the Child Safety Through Design on 2013, that is strictly focused on researching and regulating safe products for children, leaving the main branch to focus on the other missions. Co-relating significant happenings in Japan such as 2011's Tohoku earthquake, Table 2 illustrates KDA's changes throughout its history. From the table, we can consider how the associations keeps alignment with social, economic and

political changes.

Table 2: Japanese society and Kids Design association history

Year	Social Scenario	Kids Design Association Development
2004	Child died accident involving revolving door, Roppongi, Tokyo.	
2005	Japanese population decreases for the first time since it started to take record.	
2006		KDA is announced by Ministry of economy, trade and industry.
2007	Role of Minister of State for Measures for Declining birthrate in cabinet office.	KDA is certified by cabinet office as Non-Profit Organization.
2008	Lehman Brothers Inc. files for bankruptcy for mislabeling food.	KDA magazine of awarded designs is created.
2009	Barack Obama is elected as USA president; yen strengthens against dollar.	cooperation with the National Institute of Advanced Industrial Science and Technology (AIST) on investigating [the awareness of infant accidents].
2010		KDA received more than 1000 applications; Award of Minister of State for Measures for Declining birthrate is established.
2011	Tohoku earthquake and Tsunami affected Japan; yen exchange rate became the highest since world war II.	Award of Minister of Consumer Affairs is established; earthquake recovery supporting project starts; KDA receives commendation of [good contribution for encouraging parenting of children] by cabinet office.
2012	50 nuclear power plant bases stopped in Japan; inauguration of Tokyo Sky tree.	Department for supporting the recovery of disaster affected areas is established.
2013	Tokyo receives rights for holding 2020 Olympic games.	prime minister's award is established; CSD certification system starts.
2014	consumption tax rose from 5% to 8%; population of young women estimated to decrease by 50% by the year of 2040.	kids design guideline made into JIS; awarded application reaches 1500 in total; safety goods fair with science 2014] is held.
2015	laws and policies are made for supporting women throughout their careers and lives.	Award of minister of gender equality is established; The 9th KDA receives most applications and accepts most awards in history (474 applications, 308 awards).
2016	Kumamoto Earthquake affected Japan; Japan voting age lowered from 20 to 18.	KDA 10th anniversary.
2017	Donald Trump is elected as USA president.	Based on its three Design missions, KDA creates new manifesto with ten specific goals.

KDA Network and Social roles

As a Non-Profit Organization, Kids Design Association is supported by 106 active members. When we look at the association members' growth on figure 1, we notice a big increase from 35 to 95 members between 2006 and 2008, followed by an eventual reduction and stagnation from 2009, ending 2013 with 91 members. This coincides with 2008' Japan's economic recession (Volmmer & Bebenroth, 2010) and the great Tohoku earthquake incident in 2011, that affected public interest on children related matters. From 2014, the association restarted to steadily grow, where we can correlate that with an increase in public relations investments and an increased support from the country's government, who established new ministry awards.

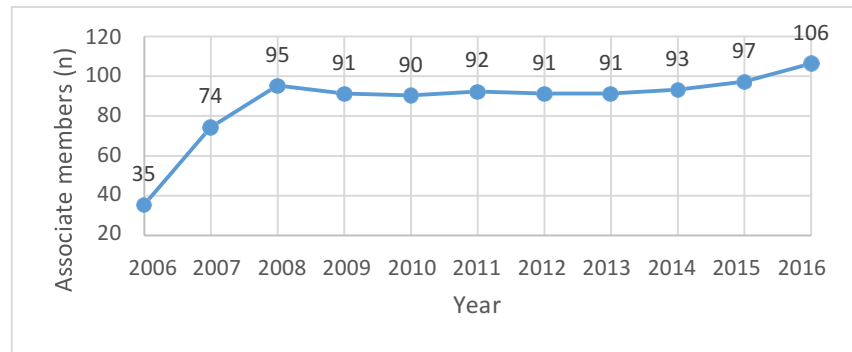


Figure 1: KDA members throughout the years

Among those 106 members, 63 are companies, 24 are local governments, and 17 are Research institutes. In contrast, the Japanese Toy association has 197 associated members, being 186 companies, 8 cooperatives and 3 other associations (Japan Toy Association, 2017). While JTA has a bigger network, KDA displays more versatility, as most of its associated companies, for example, are not exclusively dedicated for children but product developers or service providers on a larger scale to society such as Panasonic, Mitsubishi, or Tokyo Construction Co. The research institutes act as advisers and observers, analyzing and providing beneficial research data for the association. Among them we find the Japan Pediatric Society, Japan Industrial Designer's Association, Tokyo Gakugei University, and the Ministry of Economy, Trade and Industry. Finally, the connection with 14 of the 47 local governments of Japan establishes a channel with social demands, also providing chances for direct policy-related interventions regarding children. On figure 2, we can see KDA associated prefectures around Japan.

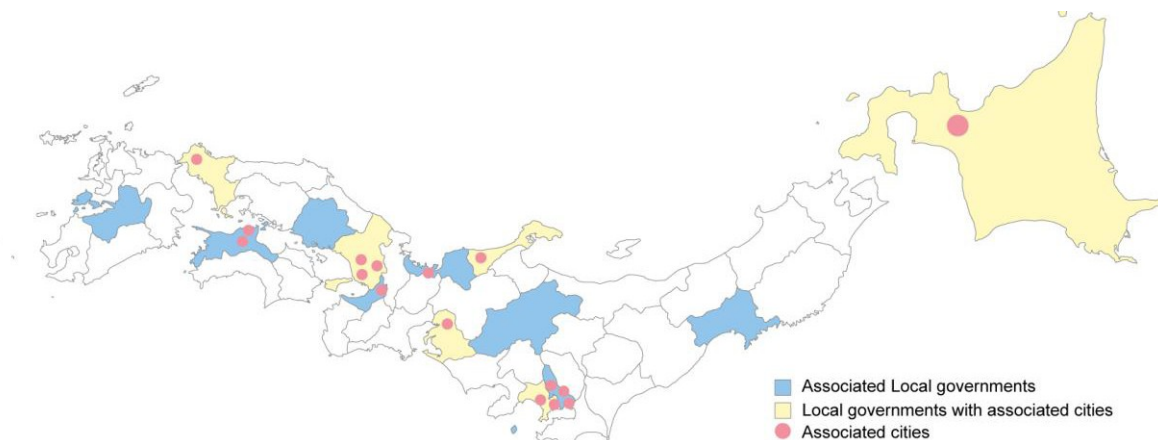


Figure 2: Local Governments and Cities associated with KDA

By taking in consideration those different members and advisors, KDA aims to take a central role between their spheres, mediating interests and acquiring

knowledges to improve the quality of children's lives. According to the association, this would be a position that bridges the gap between industries, research, and costumers, always taking children in consideration. Also, as seen on figure 3, the association expects that, with this relationship established, they can provide a smarter future for children. A recent action plan, however, puts the children as the center of these spheres, with the association providing communication between different stakeholders.

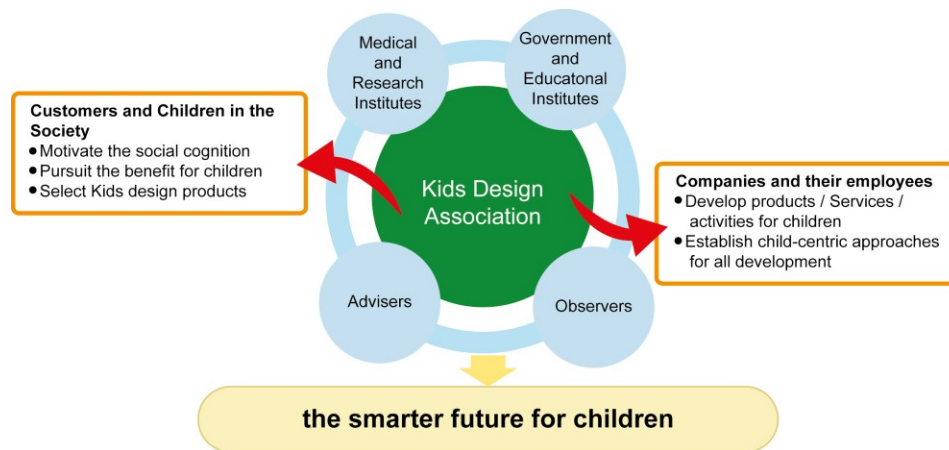
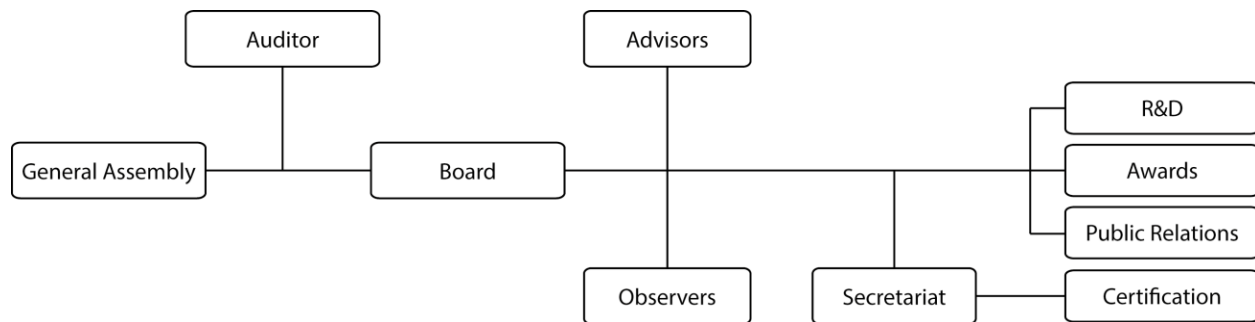


Figure 3: KDA social role model

Organizational structure and project sections

Kids Design Association consists of corporate members of a wide range of industries, local government members, research institutions and related organizations. Better visualized on figure 4 below, General assemblies are regular held once a year by corporate members, possibly involving more members on different times of the year, given extraordinary situations. Led by the association's chairperson, the board plays a central role in the organization, discussing and deciding important matters such as the budget and activity policy. The board forward the desired activities to be promoted by project teams and working groups organized into three directly supervised sections: Research and Development (R&D); Awards; and Public relations. A fourth separate section, overviewed by a secretariat, is responsible directly for safety certifications, denominated Child Safety through Design. Below is a description of these four sections.

Figure 4: KDA Organizational Structure



- **Award activities – Kids Design award:** Better described on the following section, KDA is a commendation program based on the three Kids Design missions.
 - **Certification activities - CSD:** Founded in 2013, the Child safety through design (CSD) is a certification program for products safety. It certifies products that takes in consideration past related and similar accidents, or information regarding unsafe incidents that have happened on society.
 - **Research and Development:** Through the research institutes, companies, and local government members, the KDA association conducts researches based on their 3 design Missions. The research results are reflected both in the association’s processes, as well as on guidelines or design tools available to the public. Currently under restructuring.
 - **Public Relation Activities:** Exhibitions and workshop events of awarded submissions. The association proactively spreads / promotes Kids Design guidelines through forums, symposium, and websites.

While each of this section needs a dedicated research, we focused our current research on the Kids Design Award.

Kids Design Award

The Kids Design Award is a commendation program for performing and promoting the three Kids Design Missions. Not limited to children-dedicated products or services such as toys, this award welcomes a wide range of products, facilities, programs, and research activities for children and adults, as long they make considerations regarding children usage. While the award started as an independent process of the board members, on the past years it has been receiving increased government support. Today there are a total of 9 minister awards and special awards such as the “Reconstruction Assistance Design”, to support disaster affected areas. Other incentive awards are given by the association and, As KDA grows by listening to social demands, new awards can still surge. Table 3 below illustrate all current awards.

Table 3: Kids Design
Current Awards

Prime Minister's Award (Highest Award)								
	Designs that contribute to the safety and security from the viewpoint of children Category: Children	Designs that contribute to the safety and security from the viewpoint of children Category: General	Designs that develop creativity and shape the future of children Category: Kansei and creativity	Designs that develop creativity And shape the future of children Category: Children's potential for learning and understanding	Designs to support comfortable child-rearing Category: Individuals and households	Designs to support comfortable child-rearing Category: Communities and Society	Designs for consumers who will lead the future	Gender Equality Theme Award
Excellence Awards	METI Minister's Awards 1 Winner	METI Minister's Awards 1 Winner	METI Minister's Awards 1 Winner	METI Minister's Awards 1 Winner	Minister of State for Measures for Declining Birthrate Awards 1 Winner	Minister of State for Measures for Declining Birthrate Awards 1 Winner	Minister of State for Consumer Affairs and Food Safety Award 1 Winner	Minister of State for Gender Equality Award 1 Winner
Incentive Awards	Kids Design Council Chairman Award		Kids Design Council Chairman Award			Kids Design Council Chairman Award		(Reconstruction Assistance Design Department) Kids Design Council Chairman Award
Special Awards	Jury Special award		Jury Special award			Jury Special award		TEPIA Special Award
	Tokyo Governor's Award							
	Kids Design Award (Passed Secondary Screening Selection)							

KDA Submission Process and merits

The submission process for KDA is not different from general Design Competition processes. On the first submission stage, only digital files are necessary. All the procedure is done online, where the interested party needs to download a preparation sheet, select a desired department and category, input personal information, and prepare documents for submission. The documents must contain at least one main image and two sub-images that explain the context, features, usage, or which of three design missions is the submission focus.

When we look at the merit points for submitters, besides from getting a minister commendation, we see a focus on product advertisement and commendation. among them, publications on Japanese medias, permission to use Kids Design mark on commercials and packaging design; and exhibitions through workshops and seminars. Currently the award has 5 main categories:

- **Products:** wide range of product that takes children of any age into consideration.
- **Architecture:** Spaces dedicated for children such as nursing houses, or considerations regarding Environmental Universal Design.
- **Communication:** Services, systems or workshops related with children;
- **Researches:** researches with a focus on children, their needs, products and services;
- **Reconstruction Assistance:** Submissions focused on supporting disaster-affected areas such as Tohoku's earthquake affected region.

KDA Evaluation Process

Initially each online submission validity is verified by the association's secretariat. The secretariat checks if all the documents are in order, if it took children consideration on its design, if it's a recent design, and if it is not a repeated submission from previous years. If everything is in order, the secretariat will ask for additional materials, such as products, videos, or mockups, as well as the submission fee payment of 50.000 yens (around 450 US Dollars).

For the evaluation, specific days are decided for each of the five categories. On these days, independent evaluation committees will be formed composed of professors, doctors or field experts. The secretariat become assistants to the evaluators, supplying them with additional data about each submission, as well as comparing with previous years entries to check for originality. Acting more as guidelines than decisive factors, the evaluators rate the following 4-point scale:

- Usability, Functionality, Manipulation;
- Viability and benefits to society;
- Originality, creativity, and innovation;
- Overall Aesthetics, Design, usage of colors, and shape.

Each evaluation is followed by general comments from evaluators, who will decide between awarding or not the entree. Depending on the submission's qualities, they are awarded by the association, passing to a third and final evaluation to decide the minister's awards. This evaluation is performed collectively taking the evaluators reviews, the association considerations and the ministers' social demands. With a direct commendation from the prime minister, the minister awards are announced through a ceremony. From this stage on, exhibitions of the awarded products take place on prefectures around Japan.

Kids Design Submission Reports

From 2006 to 2017 the Kids Design Award received a total of 4.081 applications, and awarded 2.453 submissions. Observing the changes between submissions provided a way to understand the association growth and challenges, as well as to observe trends in the Japanese Industry. On figure 5, we can see the number of submissions and awards from the year 2006 to 2016, as well as the proportion rate between them. By observing the submission numbers, we see a steady growth from 2006 to 2010, followed by a decrease in applications, possibly due to the earthquake disaster impact on the country. The submissions started to grow again on the following years, although the year 2017 started with a new decrease in submissions, which will require further observation. The award percentage rate increased from 42% to around 60% on the following years, with us assuming an increase in the submissions quality, more than a loosening of evaluation criteria. In theory, all products can be awarded, if they achieve the required quality.

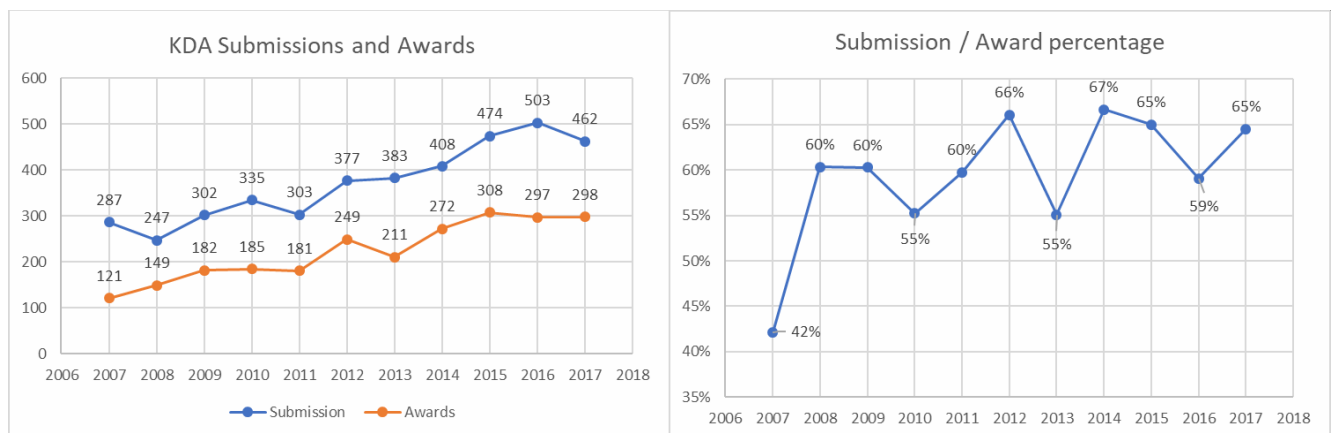


Figure 5 – KDA submissions and awards on the left and Award percentage on the right

By observing the application submissions through the five categories and three design missions we can look on possible trends for the Japanese Society. On Table 3 below, we can observe 2017 and 2016 submissions by category, with only the 'product' category having increases. Among the three missions, "Develop children's capabilities, encouraging creativity and sensitivity" received the most applications. Due to the institution of the safety evaluation section (CSD), the need for applications focused on

safety has been decreasing, however, as the government is pressing for solutions that can increase birth rate in Japan, Submissions focused on “Support caregivers during pregnancy, birth and child raising” should be increasing instead.

Table 4: 2017 (2016) submissions by category and Design Mission

Category	Promote Children Safety	creativity and development	Support Parents and Caregivers	Total
Product	105 (107)	86 (67)	65 (69)	256 (243)
Architecture	14 (19)	65 (77)	44 (53)	123 (149)
Communication	9 (11)	44 (50)	24 (31)	77 (92)
Researches	0 (3)	1 (4)	2 (3)	3 (10)
Recons. Assist.	0 (2)	2 (7)	1 (0)	3 (9)
Total	128 (142)	198 (205)	136 (156)	462 (503)

Another negative trend is the drastic reduction on Researches submissions, indicating that the association is not managing to draw the interest of academic researchers. Many explanations can come for this trend. One explanation is the lack of academic repercussion, since KDA is not a journal or a conference. Regardless, academic support can be vital and this matter should be better taken in consideration for future awards. The category “Reconstruction Assistance” has also been receiving less submissions, however, since it has already been 6 years since the Tohoku earthquake, this program is already expected to reduce activity.

Considerations

Kids Design Association is a unique organization that is not quite an industrial, design, medical, research, or even political, but, as a non-profit organization, something in between. Aiming to mediate these different stakeholders, the association intends to promote a better environment and future for children. This model has been proving successful as the association has been growing while attending to Japanese society demands and by achieving government support.

Throughout its history, KDA has also been keeping faithful to its three design missions “Contribute to children’s safety”, “Develop children’s capabilities, encouraging creativity and sensitivity”, and “Support caregivers during pregnancy, birth and child raising”. However, as Japanese society has been developing, we see an expanded focus on its last goal as to increase birth rate in the country. As seen on the number of submissions for this category on the kids design award, this matter remains a challenge to be faced by both the association and Japanese society. Analyses of the Award submissions also pointed that the association is having difficulties in getting research submissions. This can turn to be a limitation, since KDA should use the support of the academia to better mediate the interests of industry and society.

Another possible limitation for the association’s growth is that, by focusing on Japanese society’s demands, KDA may be lacking internationalization, not communicating or aligning with international associations advancements, issues or trends. Language still presents a big barrier for Japanese associations, with only a few information available in English. However,

this factor also contributed into making KDA organization model unique and worth exploring. We hope that, on the future, more openings for internationalization and discussion arise for Kids Design Association, so that its model can better develop and contribute for the institution and development of children-dedicated associations around the world.

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References

- Association for Young Children Europe – AYCE*. (2012). Institutional website. Retrieved September 03, 2017, from <http://ayceurope.com/>
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 147-160. doi:10.2307/2095101
- Association of Play Industries – API*. (2013). Institutional Website. Warwickshire, UK. Retrieved September 03, 2017, from <http://www.api-play.org>
- Hartigan, P. (2006). It's about the people, not profit. *Business Strategy Review*, 17(4), 43-45 DOI: 10.1111/j.0955-6419.2006.00433.x
- Hughes, F. P. (2009). *Children, play, and development*. Boston, USA: Safe publications.
- Japan Times*. (2004). Boy Crushed in Roppongi Hills Door [Newspaper Story]. Retrieved from: <https://www.japantimes.co.jp/news/2004/03/27/national/boy-crushed-in-roppongi-hills-doors/#.WaYw98gFPY>
- Japan Times*. (2016). Japan and its birth rate: the beginning of the end or just a new beginning? [Newspaper Story]. Retrieved September 03, 2017 from <https://www.japantimes.co.jp/community/2016/02/10/voices/japan-birth-rate-beginning-end-just-new-beginning/>
- Japan Toy Association*. (2017). Business information [Technical Report]. Retrieved September 03, 2017, from http://www.toys.or.jp/pdf/jta_business_info_english.pdf
- Kids Design association. (2014). *Child Safety through Design: CSD* [Institutional website]. Retrieved September 03, 2017 from http://www.kidsdesign.jp/news/20140331_post_81.html
- Kids Design Association*. (2017). institutional website. Retrieved September 03, 2017 from <http://www.kidsdesign.jp/kidsdesign/>
- Kids Design Collaborative. (2014). *Kids Think Design* [resource website]. Retrieved

September 03, 2017, from <http://www.kidsthinkdesign.org/about.html>

Kids Right Foundation. (2003). Institutional Website. Retrieved September 03, 2017, from <https://kidsrights.org/homepage>

Kind & Jugend. (2016). *Kids Design award* [Institutional Website]. Retrieved September 03, 2017, from <http://www.kindundjugend.com/kindundjugend/Trade-Fair/Events/Kids-Design-Award/index.php>

Minister of Health, Labor and Welfare (Ed). (2012). *Vital Statistics of Japan: General Mortality*.

Retrieved September 03, 2017, from

<http://www.e-stat.go.jp/SG1/estat/NewListE.do?tid=000001028897>

Vollmer, U., & Bebenroth, R. (2012). The financial crisis in Japan: Causes and Policy reactions by the bank of Japan. *The European Journal of Comparative Economics*, 9(1), 51-77

Yin R. (2013). *Case study research: design and methods*. London: Sage publication.

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