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A RESEARCH ON DESIGN EVALUATION USING QUALITY KARTE

–USING A DESIGN EVALUATION SURVEY OF G-MARK WINNING WORK AS A CASE EXAMPLE–

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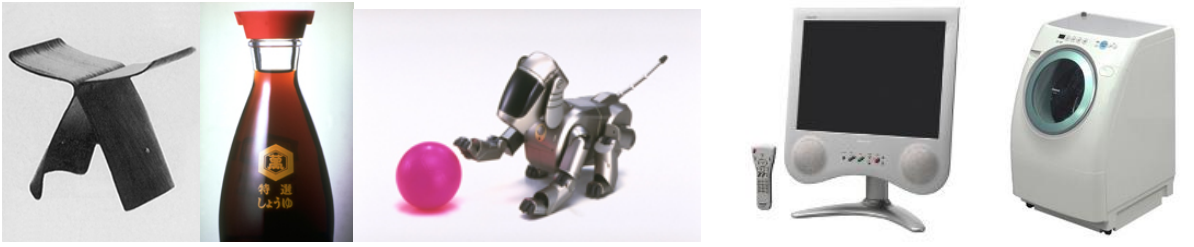
ABSTRACT:

The goal of this research was to check if there are gaps in design evaluations between designers, providers, and end users, and to utilize these gaps in product development. The Quality Karte is a series of design evaluation indicators created based on the screening reviews for the Japan Good Design Award and was used in this paper to examine the items awarded the Good Design Award. The evaluators were designers, creators, providers, and end users. The data was statistically analyzed for evaluation gaps between them as discussions were conducted.

1. METHODS

The five prize-winning items of the Good Design Award in figure 1 were evaluated with a questionnaire composed of 34 indicators. The evaluators chose one of the five possible answers – "disagree," "disagree somewhat," "agree somewhat," "agree," and "do not know" – for each indicator. Statistically significant gaps in evaluations between the groups using a one-way factorial analysis of variance (multiple comparisons employing Tukey HSD) were found.



01. Butterfly Stool 02. Soy sauce bottle 03. Entertainment Robot 04. Television 05. Washing Machine

(Quotation from http://www.g-mark.org/search/)

Figure1: Evaluation Products

Term	2006.0824-25	2006.10.03-13	2006.11.17-26	2007.01.18-23	SUM
Place	Tokyo Big Sight	Tokyo National University of Fine Arts & Music	International Design Centera NAGOYA	Fukuoka Asian Art Museum	
Total Number	166	262	161	154	743
Designer	100	40	44	28	212
Provider	12	7	13	10	42
EndUser	54	215	104	116	489

Table1: Date Information

2. RESULTS

Table 2 shows the results of the survey. Among the 5 items, statistically significant evaluation gaps were evident for each between the indicators, 4 to 9. For the butterfly stool, gaps were evident in terms of 4 indicators, on 3 of which the designers gave a statistically significant higher evaluation than the end users. For the soy sauce bottle, gaps were evident in terms of 7 indicators, on 6 of which a gap between the providers and the designers or end users was present. For the entertainment robot, gaps were evident in terms of 9 indicators, on 8 of which the designers gave a statistically significant higher evaluation than the end users. For the television, there were gaps in terms of 5 indicators, on 1 of which gaps between all three groups were present, and on all 5 the designers gave statistically significant lower evaluations than the end users. For the washing machine, there were gaps in terms of 4 indicators: the designers gave statistically significant lower

evaluations than the end users. For electric products, functions have become complex over the past years, and it can be assumed that end users don't sufficiently understand the products, leading them to give high evaluations. Taking into account that the butterfly stool was created by a famous Japanese designer and is a permanent part of MoMA, it can be assumed that designers know the product and would give it a high evaluation. For the soy sauce bottle, the providers' evaluation gaps were large. This is probably due to its having been around since 1961 and being a very familiar product.

Item	Indicator	1. Design	2. Provid	3. End	F	P
	The item is appropriately priced. 1>3*	2.42 (0.97)	2.50 (1.09)	2.21 (0.93)	F(2,705)=4.51	*
	Consideration was given to universal design 1<3*	2.07 (0.85)	2.19 (1.01)	2.31 (1.00)	F(2,656)=4.09	*
	The product has influenced society in some way 1>3**	2.91 (0.98)	2.95 (0.97)	2.56 (1.07)	F(2,663)=8.61	**
	It feels Japanese 1>3*	3.24 (0.99)	3.24 (1.02)	3.04 (1.00)	F(2,718)=3.54	*
	The item has a high degree of completion 1<2*, 1<3*	3.42 (0.72)	3.74 (0.55)	3.43 (0.78)	F(2,719)=3.24	*
	The item has outstanding beauty 2>3*	3.15 (0.92)	3.41 (0.82)	3.04 (0.93)	F(2,722)=3.50	*
	The item matches my lifestyle. 1<2*	2.92 (0.95)	3.37 (1.02)	3.07 (0.95)	F(2,704)=4.27	*
	The item creates a sense of satisfaction due to owning it. 2>3*	2.11 (1.05)	2.49 (1.25)	2.02 (1.05)	F(2,716)=3.92	*
	When I used the item, it gives users to comfort the mind and body. 1<2*, 1<3*	2.81 (0.88)	3.25 (0.81)	3.02 (0.88)	F(2,712)=6.31	**
	Consideration was given to universal design 1<2**, 1>3**	2.86 (0.95)	3.42 (0.68)	2.95 (0.93)	F(2,659)=5.79	**
	It feels Japanese 1<3*	3.62 (0.67)	3.80 (0.61)	3.74 (0.54)	F(2,732)=3.71	*
	The item has an overall sense of design. 1<3**	3.06 (0.86)	3.10 (0.89)	3.31 (0.80)	F(2,717)=6.84	**
	The item has outstanding beauty 1<3*	2.76 (0.91)	2.95 (0.92)	2.96 (0.89)	F(2,716)=3.70	*
	The item is not influenced by the times or fashion. 1<3**	2.33 (0.84)	2.59 (0.95)	2.59 (0.99)	F(2,698)=5.27	**
	One can feel attachment to the object. 1<3*	2.33 (0.87)	2.31 (0.89)	2.52 (0.93)	F(2,703)=3.75	*

Item	Indicator	1. Design	2. Provid	3. End	F	P
	Care has been given even to details 1<3*	2.87 (0.93)	2.90 (0.98)	3.08 (0.87)	F(2,683)=3.81	*
	The item has an anppropriate sense of luxury. 1<3**	2.70 (0.95)	2.93 (0.95)	2.94 (0.91)	F(2,707)=4.81	**
	The item has a high degree of completion 1<3*	2.80 (0.93)	2.98 (1.07)	2.99 (0.94)	F(2,684)=2.85	+
	The item has an overall sense of design. 1<3*	2.78 (0.96)	3.00 (1.06)	2.97 (0.91)	F(2,704)=3.09	*
	The item has outstanding beauty 1<3*	2.42 (0.93)	2.60 (1.11)	2.63 (0.97)	F(2,706)=3.33	*
	The item can be used for a long time. 1<3*	1.70 (0.71)	1.78 (0.72)	1.87 (0.88)	F(2,678)=3.03	*
	The item will remain interesting. 1<3*	1.53 (0.74)	1.68 (0.92)	1.72 (0.85)	F(2,684)=3.60	*
	Consideration was given to universal design 1<3**	1.85 (0.91)	1.97 (0.96)	2.18 (0.96)	F(2,635)=8.12	**
	The product has influenced society in some way 1>3*	3.52 (0.77)	3.76 (0.49)	3.45 (0.81)	F(2,716)=3.09	*
	The item has a sense of good quality based on the image of the manufacturer or seller. 1<3*	3.14 (0.77)	3.17 (0.77)	3.30 (0.73)	F(2,716)=3.61	*
	The item is of good quality. 1<3*	3.05 (0.80)	3.31 (0.79)	3.23 (0.73)	F(2,658)=4.10	*
	It is possible to imagine using the chair in some part of one's life. 1<3*	3.26 (0.89)	3.35 (0.95)	3.45 (0.77)	F(2,719)=3.82	*
	Consideration was given to universal design 1<3*	2.41 (0.88)	2.65 (0.85)	2.62 (0.93)	F(2,648)=3.49	*
	The product has influenced society in some way 1<2*,1<3*	3.12 (0.85)	3.50 (0.76)	3.13 (0.87)	F(2,708)=3.34	*

**p<.01 *P<.05 +p<.06

(The photos are quoted from http://www.g-mark.org/search/)

Table2: Analysis

4. CONCLUSION

The results of this survey show there are gaps in evaluations made by designers, providers, and end users due to some sort of reasons. To make use of the evaluation gaps for product development, we invited on a trial basis 15 product designers to participate in a workshop to discuss the gaps. During the compilation of the opinions of the creators, many of the participants mentioned that this was a good opportunity to think about "creation" again. In the future, when

creating an effective method to handle for appeals based on the results of this survey, we will provide similar opportunities for both providers and end users.

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