

The Use of Big Data Collected Through “Ai-Musubi”, a Program Established by the Ehime Introduction Bureau

Ehime Prefecture



Background

In Ehime Prefecture, the primary factor in the declining birth rate is the delaying or forgoing of marriage. Requests were made to the prefecture for the implementation of a marriage support program. In response to these requests, we began a program to support marriage, drawing on examples from other leading-edge initiatives.

Purpose of Project

To provide a place to meet good partners, for the many men and women who want to marry but choose to be single because they are unable to meet suitable partners.

Outline of Project

The Ehime Introduction Bureau opened in November 2008 and mainly supports people seeking marriage by holding matchmaking events called “de-Ai events.” To support encounters between single people and their progression as couples, the Ehime Introduction Bureau has actively recruited companies to cooperate in this project (as event organizers) and trained volunteers who follow the couples and the development of their relationship.

We commission these projects to the Ehime Corporate Association, which was established by various local companies. In addition, we ask the companies not to impose a certain sense of values or to allow harassment if the participant is known to the

company.

In addition to these events, we commenced a one-on-one matchmaking business called “Ai-Musubi” in 2011.



⑤ **How to use “Ai-Musubi”** (for single people, either male or female)

- (1) Make an appointment for membership registration on the website of the Ehime Introduction Bureau using a mobile phone or computer.
- (2) Submit the required documents for registration to the Ehime Introduction Bureau (after confirming your identity at an interview, a membership card will be issued).

* The conditions for membership with “Ai-Musubi” are that you are unmarried, 20 years of age or above, sincerely wish to marry, and are applying voluntarily. Membership is not limited to residents of Ehime Prefecture—a person living in another prefecture can also become a member.

- (3) Book a date and time, using your mobile phone or computer, to view profiles (45

minutes per viewing).

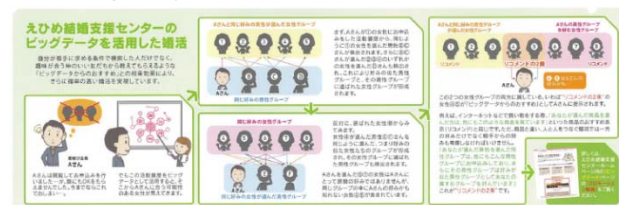
- (4) View member profiles using conditional searches from the tablet terminal at the Ehime Introduction Bureau.
(You can apply to meet up to three people per viewing.)
- (5) If the other party accepts, an Ai-Musubi supporter arranges the date, time and location (company) for the meeting.
- (6) After the Ai-Musubi meeting has been held, both parties confirm if they intend to continue the relationship.
- (7) The Ai-Musubi supporter will follow up regularly even after the start of the relationship.

Progress and Achievements

In Ehime prefecture, “de-Ai events” and “Ai-Musubi” have been systematised and have accumulated 500,000 pieces of data per year including the users’ trends in relation to participation in events, the qualities they seek in a partner, the status of their matchmaking application, and their reactions when a meeting is requested. When we analysed the data as “Big Data” in 2014, we found a tendency for the possibility for progression after the initial encounter to be linked to the age difference between the male and female, as well as the number of conditions a user had in searching for a marriage partner. In addition, to encourage new encounters, we developed a recommendations algorithm in cooperation with Professor Takeaki Uno of the National Institute of Informatics. How it works is as follows:

- (1) Mr. A applies for a meeting with Ms. B.
- (2) The system detects the behaviour data of the men who have applied for a meeting with Ms. B in the past.

- (3) Simultaneously, “The group of women who prefer the group that includes Mr. A” is detected based on past data.
- (4) Using the detection results, the system displays the persons belonging to both the “Female group chosen by men who have the same preference”, and the “The group of women who prefer the group including Mr. A”.
- (5) This makes it possible for Mr. A to meet someone who might not have come up in his own search, despite their compatibility being likely.



(A description of this illustration can be found at the end of the text)

The big data is analysed and managed after eliminating all the personal information that can identify the individuals.

1. Making the most of “de-Ai” events”

A new function was added to the event information page which displays the possibility of a user meeting someone new at each event.

A major feature of this additional function is that the probability of a new encounter varies by changing the event that the user participates in, for instance, if the person selects an outdoor activity instead of going to a restaurant or other location for the event.

2. Making the most of “Ai-Musubi”

Users can browse the prospective partners recommended by big data. When looking for a one-on-one meeting partner, users may overlook someone who would be a good match for them by being too focused on criteria such as age or occupation. However, based on the data accumulated in the system,

users can get recommendations on people who have a combination of characteristics and preferences that make them potentially compatible.

3. Ai-Musubi supporters (Volunteers).

Registered “Ai-Musubi” supporters have abundant experience and are chosen from among the volunteers who help organize the events.

A major characteristic of the system is that a supporter will attend the initial meeting of the matched couple, and provide continued support until the wedding.

Effects of Project

One of the effects of this project is the increase in applications to meet from female members. In general, females are less likely to apply for a meeting because they are afraid of feeling hurt if they are refused. With the support of big data indicating the high probability of a meeting with the other person, they can feel more confident in making an application to a person of interest.

The other effect is an increase in matchmaking success. Typically, about 13% of requests for a one-on-one meeting are accepted. However, a meeting request for a person recommended by big data has an acceptance rate of 29%.

Problems and Responses

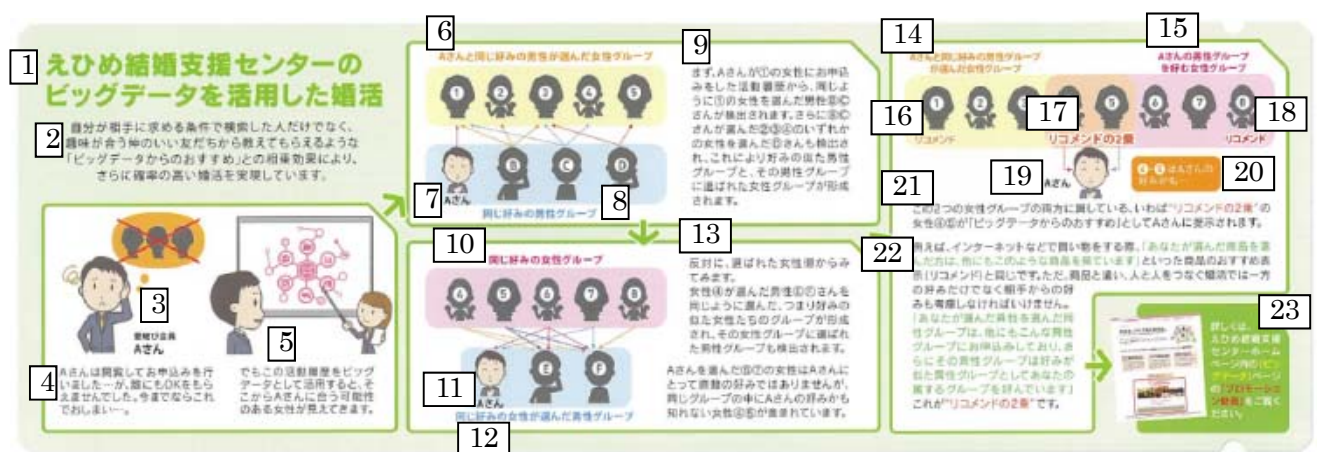
Currently, the big data in this system is still only half used. As the data accumulates day by day, there remains the major challenge of how to use the negative data that leads to a relationship or marriage, which far exceeds the amount of positive data.

We should also address issues such as the fact that the venues for membership registration or browsing the system are

located too far away for people in some areas, and that the age group of the registered members in some venues is relatively high, making it unsuitable for members in their 20s.

Outlook

While consulting with municipalities to expand the use of matchmaking systems and to create new opportunities, such as exchanges between people working in different fields, making it easier for single people who want to get married in the future to participate, we will take into account the needs of marriage support and changes in society, and support the whole region, so that many people can realise their hopes for marriage.



- (1) Searching for a marriage partner using the big data of the Ehime Introduction Bureau
- (2) It has improved the probability of finding a marriage partner by using not only the search conditions you set for the partner that you want to meet, but also the “Big data recommendations,” as if suggested by a good friend
- (3) Mr. A: A member of Ai-Musubi
- (4) Mr. A browsed female members and sent applications to meet them. But nobody replied to him. In the past, this was the end.
- (5) With his activity history, we can take advantage of big data, and, from there, suggest a female who is a good fit for Mr. A.
- (6) Female group chosen by males who have the same preferences as Mr. A
- (7) Mr. A
- (8) The group of men who have the same preferences as Mr. A
- (9) First, based on the activity history of Mr. A who applied for meetings with woman (1), Mr. B and Mr. C are also detected as having chosen the same woman. In addition, Mr. D who chose one of the women chosen by B and C, is also detected, and they will form a group of men who have a similar preference and create a recommended group of females.
- (10) The same preferred female group
- (11) Mr. A
- (12) A Male group chosen by females who have the same preferences
- (13) On the other hand, take a look at the selected female side. The group of females with similar preferences, for example, female No. 4, selected Mr. E and F and a new group is formulated. In addition, the group of males selected by the female group will be formed. Female Nos. 6 and 7 among those who selected Mr. A are not preferable for Mr. A, but, female Nos. 4 and 5 who are included in the same group may be preferable for him.
- (14) Female group selected by males who have the same preferences as Mr. A
- (15) The group of females who prefer the group that includes Mr. A
- (16) Recommended
- (17) Double recommendation
- (18) Recommended
- (19) Mr. A
- (20) Nos. 4 and 5 may also be preferable for

Mr. A...

(21) Female Nos. 4 and 5 belong to both groups that will be recommended to Mr. A as a double recommendation by Big Data.

(22) For example, you may see the recommended items when you are purchasing items through online shopping such as “Customers who bought this item also bought.” However, unlike a product, when searching for a prospective marriage partner you must consider the preferences of not only yourself but also the person you are connecting with. “The male (or female) group X which chose a female (or male) who you chose, also sent an application for a meeting to other females (or males) in female (or male) group Y. In addition, the female (or male) group Y prefers your group that has similar preferences.” This implies a double recommendation.

(23) For more information, access the Ehime Introduction Bureau website and find Big Data on the home page. Please view the video about the support system.

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Reference URL

Ehime Introduction Bureau

<https://www.msc-ehime.jp/>

Parenting support site by

Ehime Prefecture “KiraKira Navi”

<http://www.ehime-kirakira.com/>

Contact

Department in charge:

Child Care Support Division

Lifelong Support Promotion Sub-department

Health and Welfare Department