

UNFOLDING PLACE UTILITY FOR A BETTER UNDERSTANDING OF THE DECISION NOT TO MIGRATE AFTER TYPHOON HAIYAN

A migration-environment research via emotions

Elisabeth Henriët and Sabine Henry

The logo for 'Transitions', featuring a green arch over the word 'Transitions' in black text.

Environment-migration research

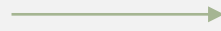
Environment and population in two different « boxes »

Shift from « objective/rational » factors to « subjective » factors

How to “measure” the environment taking socio-psychological impacts into account?

Environment-migration research

Environment and population in two different « boxes »



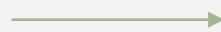
Environment = context

Shift from « objective/rational » factors to « subjective » factors



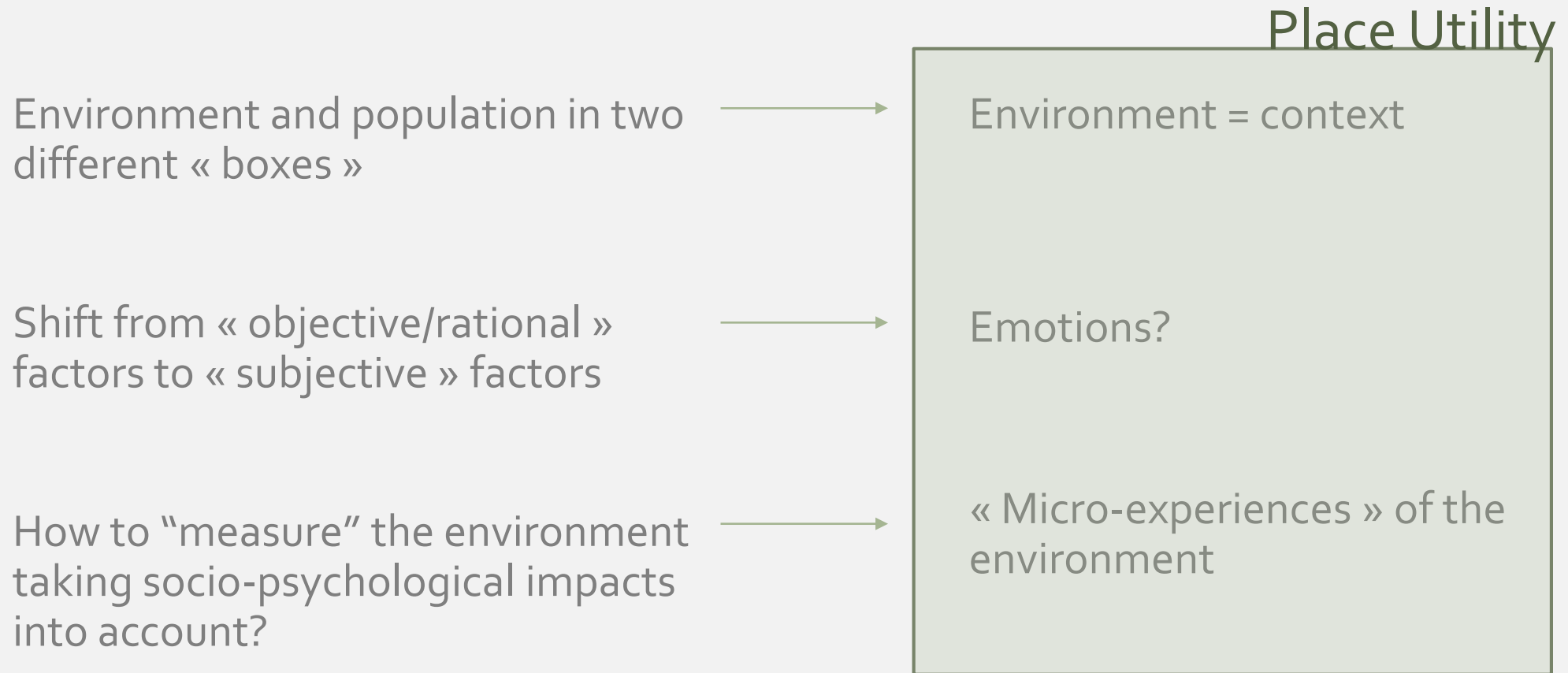
Emotions?

How to “measure” the environment taking socio-psychological impacts into account?



« Micro-experiences » of the environment

This research: Place Utility (Wolpert, 1955)



This research: Place Utility (Wolpert, 1955)

Place utility = a positive or negative quantity, expressing respectively the individual's satisfaction or dis-satisfaction with respect to that place

Emotions are used to « measure » people satisfaction

Stayers = **lagged movers** -> When do people move?

Study area: Guiuan, Philippines

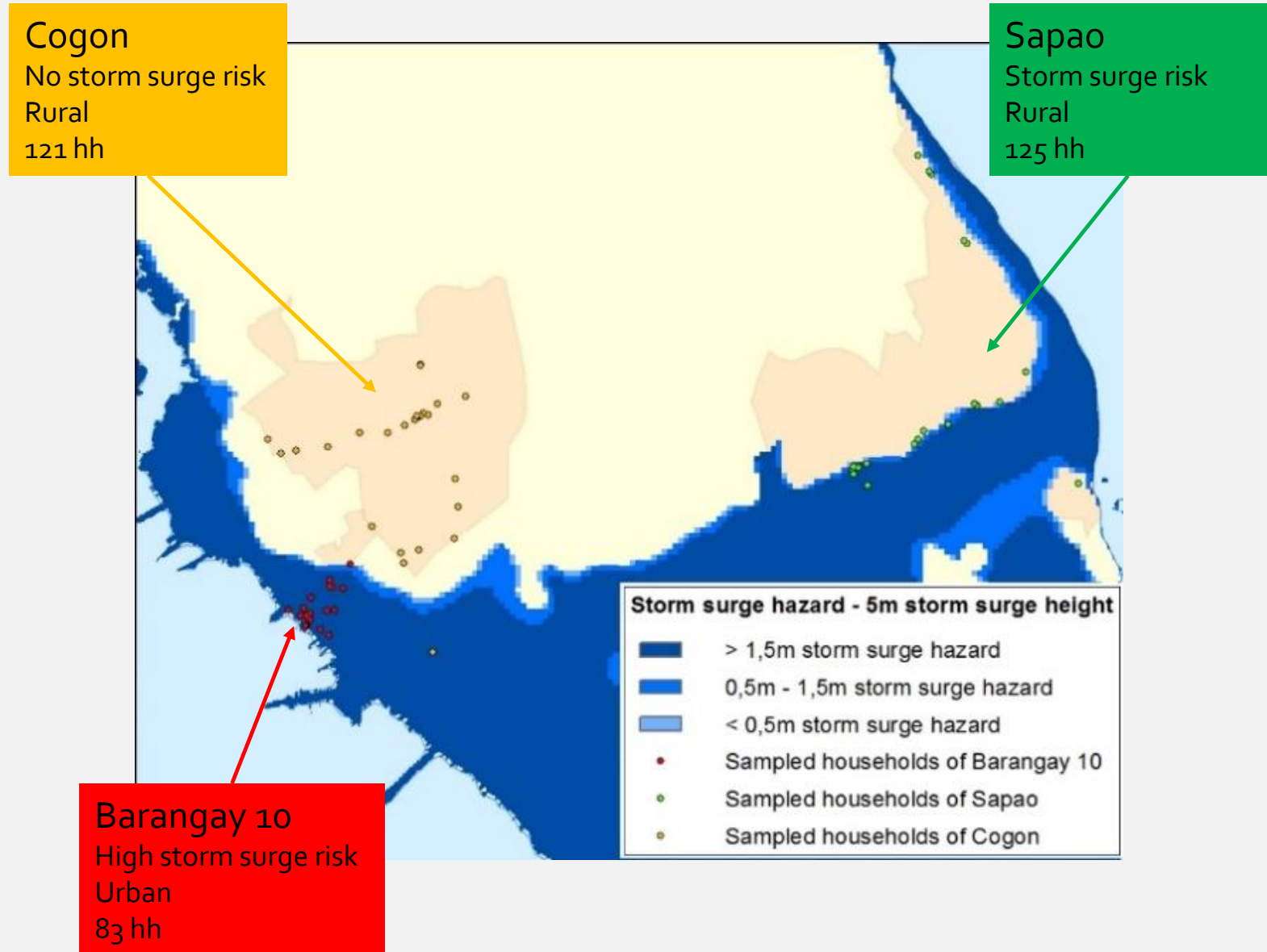
Typhoon Haiyan 2013



Study area

3 communities

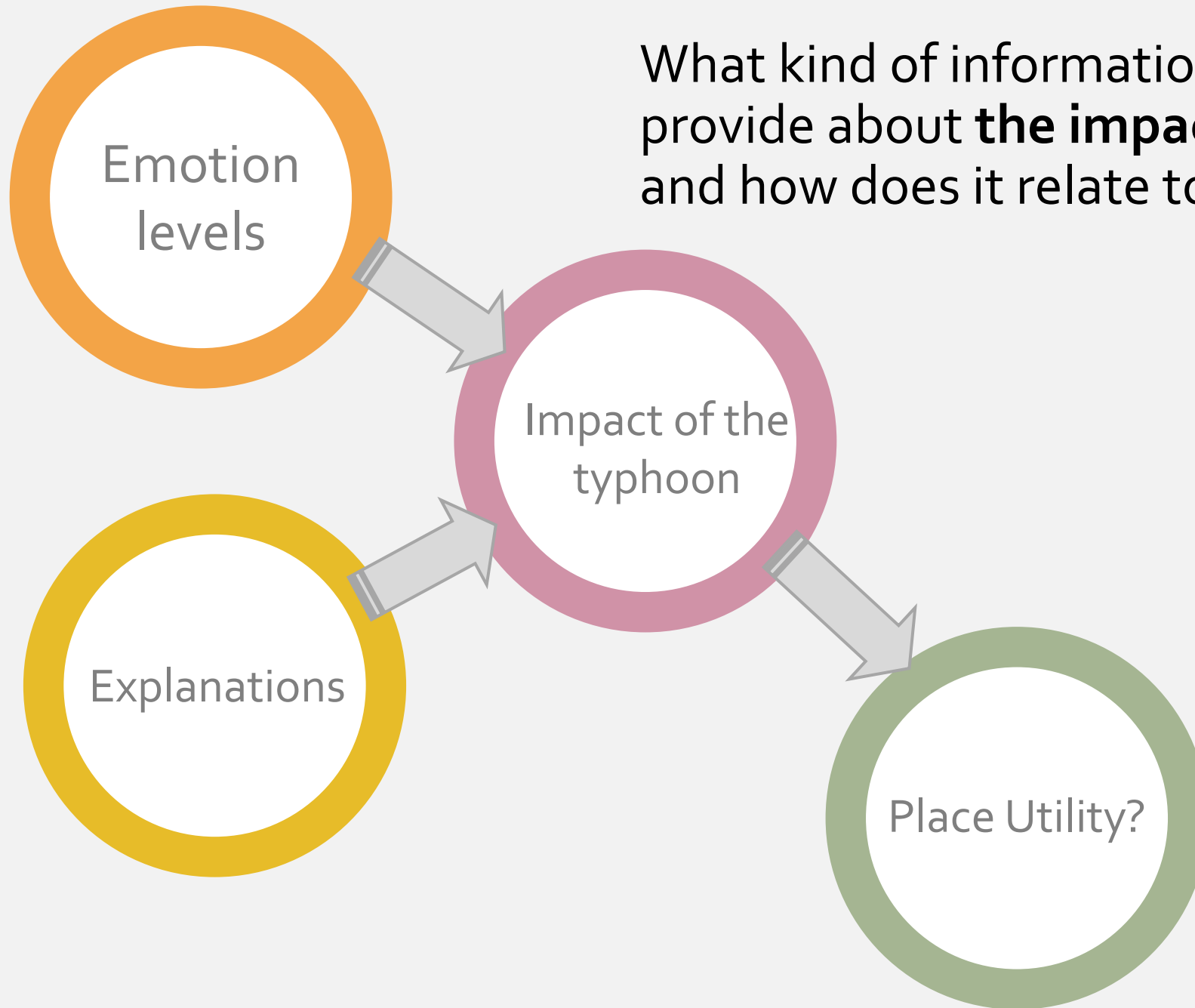
25 households sampled in each community

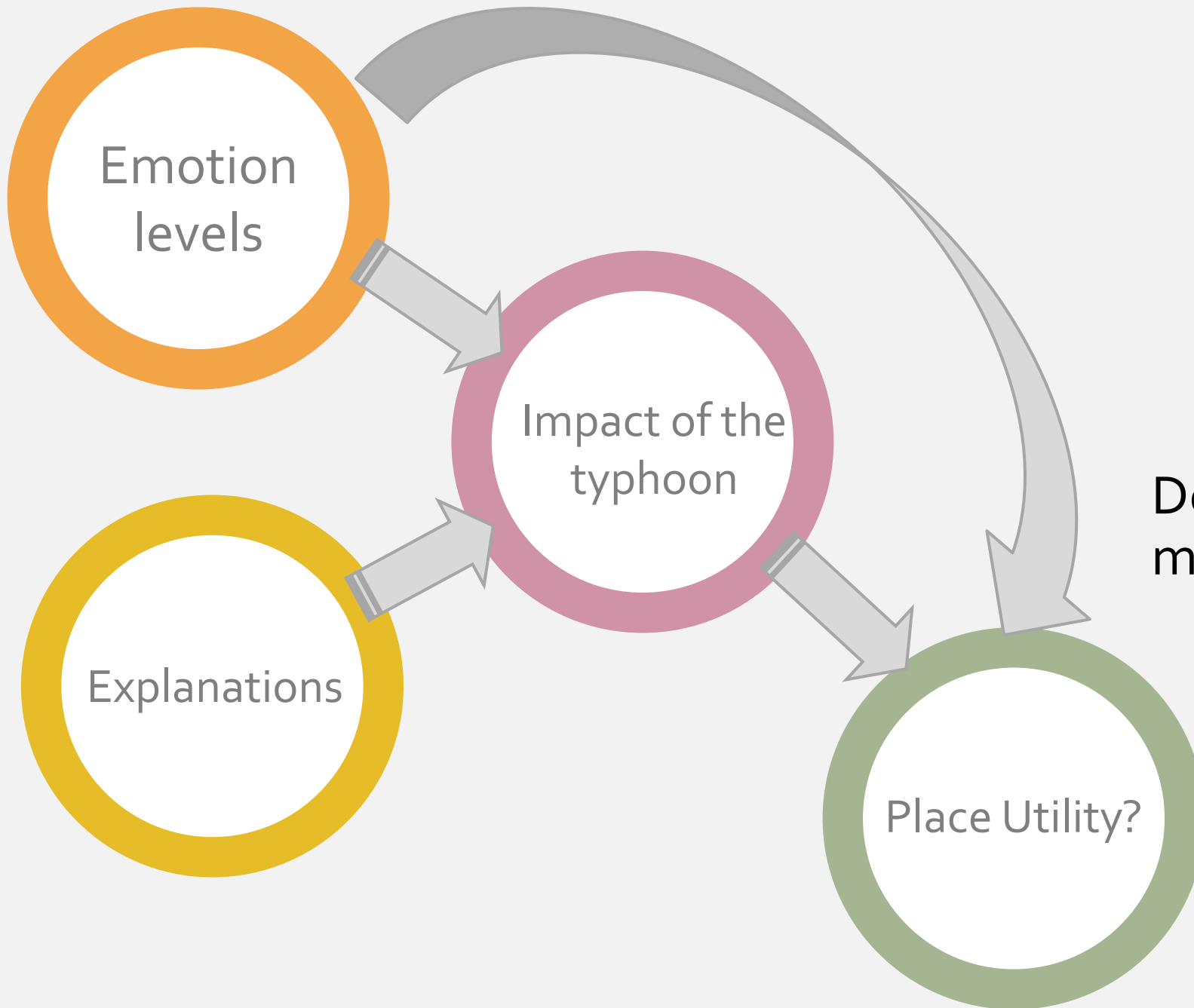


Data : collected through a game (2016)

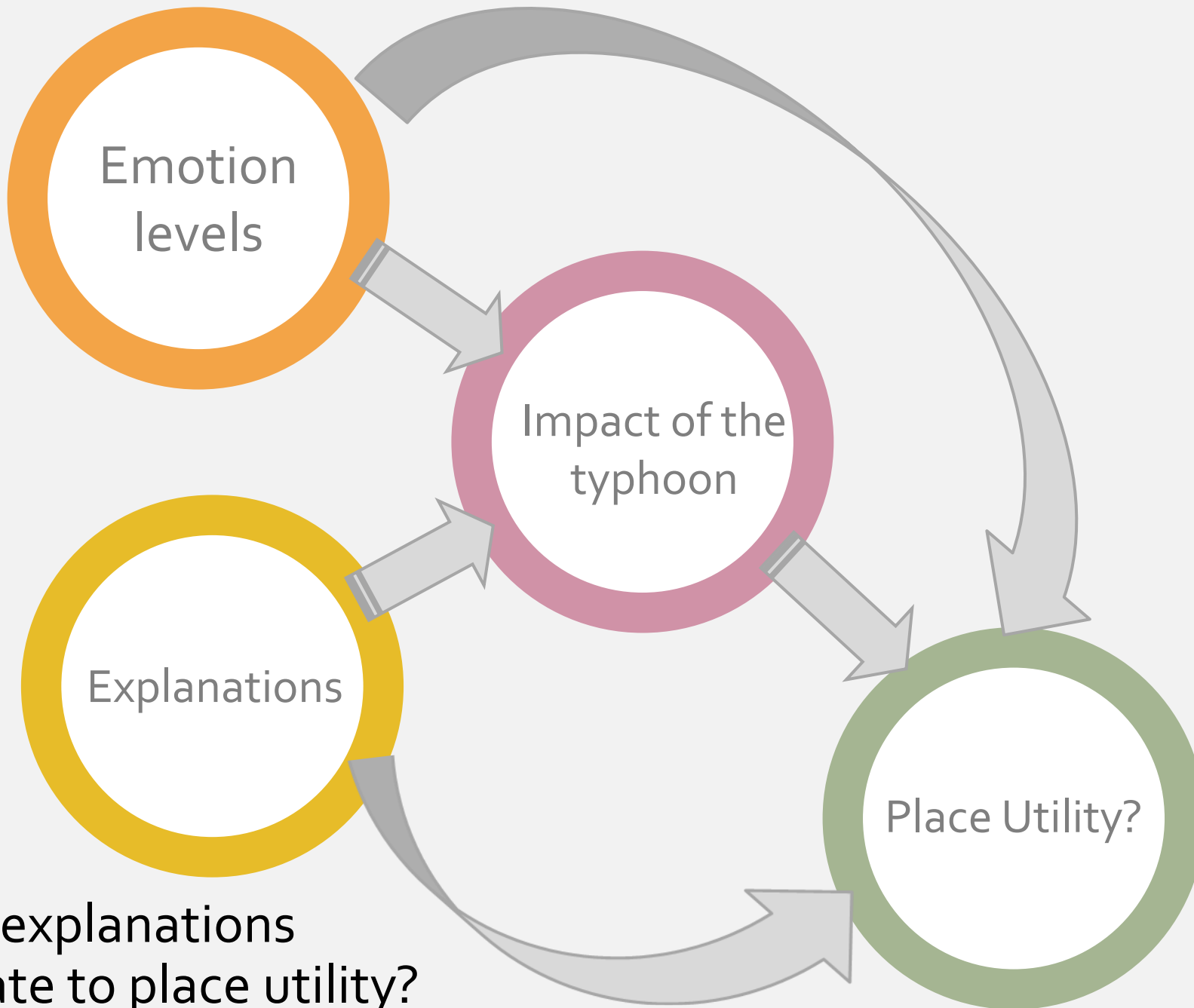


What kind of informations do the data provide about **the impact of the typhoon** and how does it relate to place utility?

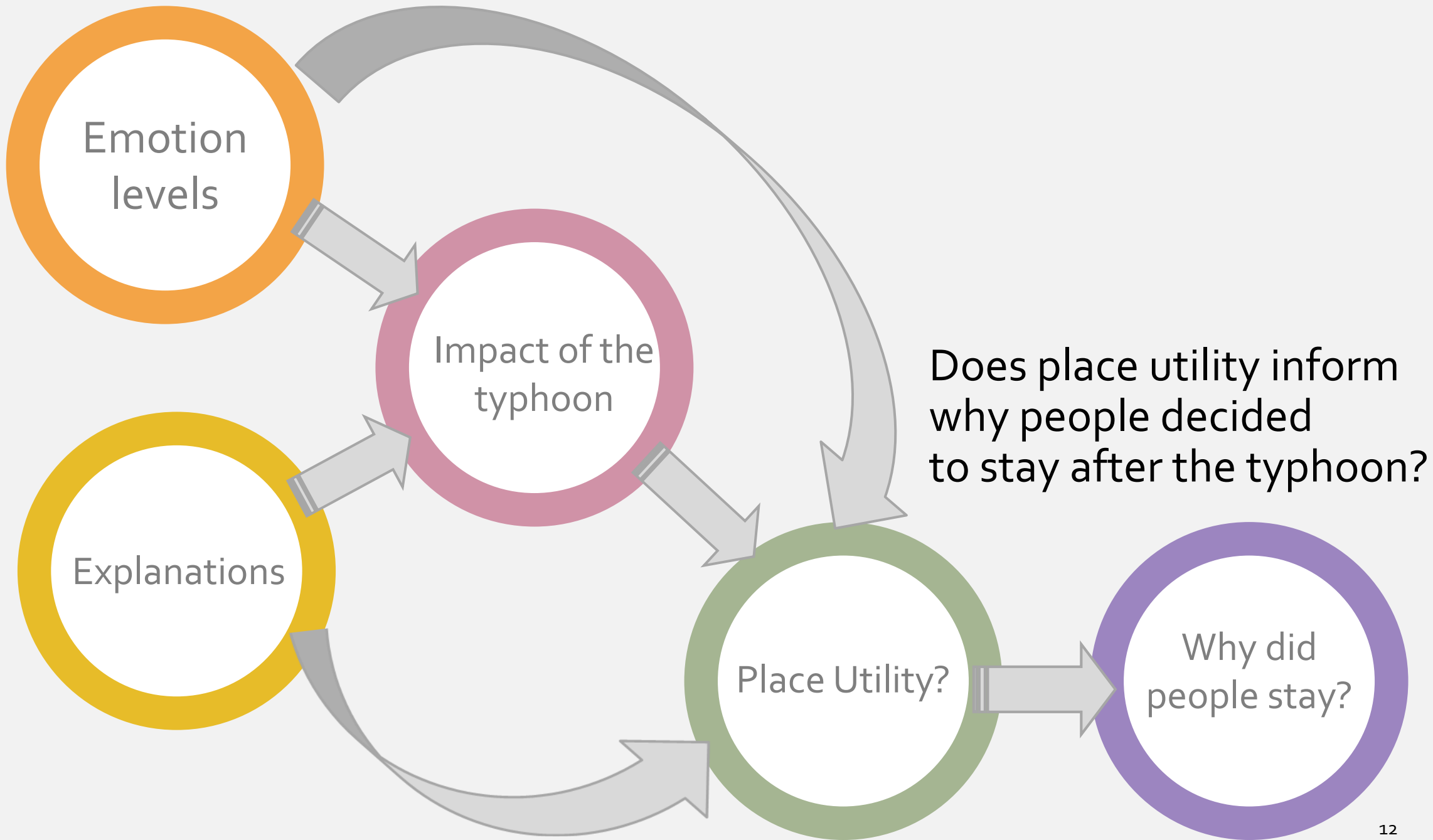




Do emotion levels measure place utility?



Do explanations
relate to place utility?



Emotion levels

$EmS_{emotion,picture,community} = \text{Mean number of emoticons associated with a picture}$



Brgy10
Cogon
Sapao
total

number of households	happy	sad	excited	calm	dominant	dominated	disgusted	afraid	angry	surprised
5	0.8	2.4	0.2	0.8	0	0	0.4	1.6	0.6	0.2
8	1.2	1.5	0.4	0	0	0.1	0	0.8	0	0.8
8	1	2.1	0.4	0.1	0	0	0.2	1.4	0	0.1
21	1	2	0.3	0.2	0	0	0.2	1.2	0.1	0.4



Brgy10
Cogon
Sapao
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number of households	happy	sad	excited	calm	dominant	dominated	disgusted	afraid	angry	surprised
9	4.6	0	0.6	1.4	0	0	0	0	0.2	0
8	2.2	0.1	0.9	2	0.5	0	0	0.8	0	0.6
7	3.4	0.1	0.3	0.7	0.1	0	0.4	0.9	0.1	0
24	3.5	0.1	0.6	1.4	0.2	0	0.1	0.5	0.1	0.2

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People from Cogon are farmers

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They were not hit as severely by the typhoon

Emotion levels

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People from Barangay 10 and Sapao are fishermen

Emotion levels

$$EmS_{total\ emotion, barangay} = \sum_{All\ pictures} EmS_{emotion, picture, barangay}$$

	happy	sad	excited	calm	dominant	dominated	disgusted	afraid	angry	surprised
Total_Brgy10	150.8	43.8	31.3	52.8	6.8	11.3	20.3	40.5	24.4	20.4
Total_Cogon	121.2	27.8	15.9	67.6	8.6	10.3	12.7	21	11.8	23.2
Total_Sapad	148	36.1	20.5	52.4	9.8	12.2	17.1	50.2	13.9	17.9
Total_Total	160.9	43.6	27.2	68.8	9.1	15.8	24.2	39.9	22.2	23.2

Happy is dominant among all communities

Emotion
levels

Impact of the
typhoon

Explanations

Explanations



Angry because the road is broken and it renders it dangerous

Explanations



Angry because the road is broken and it renders it dangerous

Excited to go home

=> Tension between attractive and repulsive socio-psychological aspects

Explanations: « calm » and « trees »

Emotion levels

Impact of the typhoon

Explanations

Livelihoods/Risk/Leisure

- I am calm because I can sit under the trees and think clearly
- I am afraid of snakes but I stay calm
- When you farm you have to be calm in general
- I am calm because the trees are growing again after the typhoon
- I am always calm
- Because they are bananas

=> Various experiences

Explanations: « calm » and « trees »

Typhoon or not

- I am afraid I am calm because I can sit under the trees and think clearly
- afraid of snakes but I stay calm
- When you farm you have to be calm in general
- I am calm because the trees are growing again after the typhoon
- I am always calm
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=> Some related to the typhoon

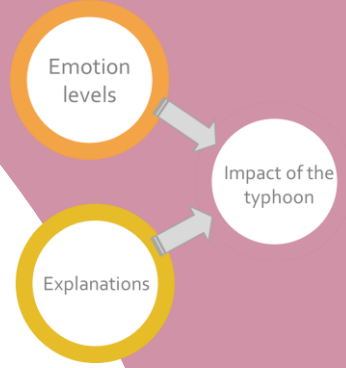
Impact of the typhoon



Emotion	Happy	Sad	Excited	Calm	Dominant	Dominated	Disgusted	Afraid	Angry	Surprised
Number of extracts linked with the emotions	352	132	78	78	24	39	67	119	64	67
Extracts coded with the typhoon	23%	51%	21%	17%	12%	5%	42%	49%	34%	55%

Surprise, sad, afraid, disgusted and angry are mainly related to the typhoon experience but not only

Impact of the typhoon

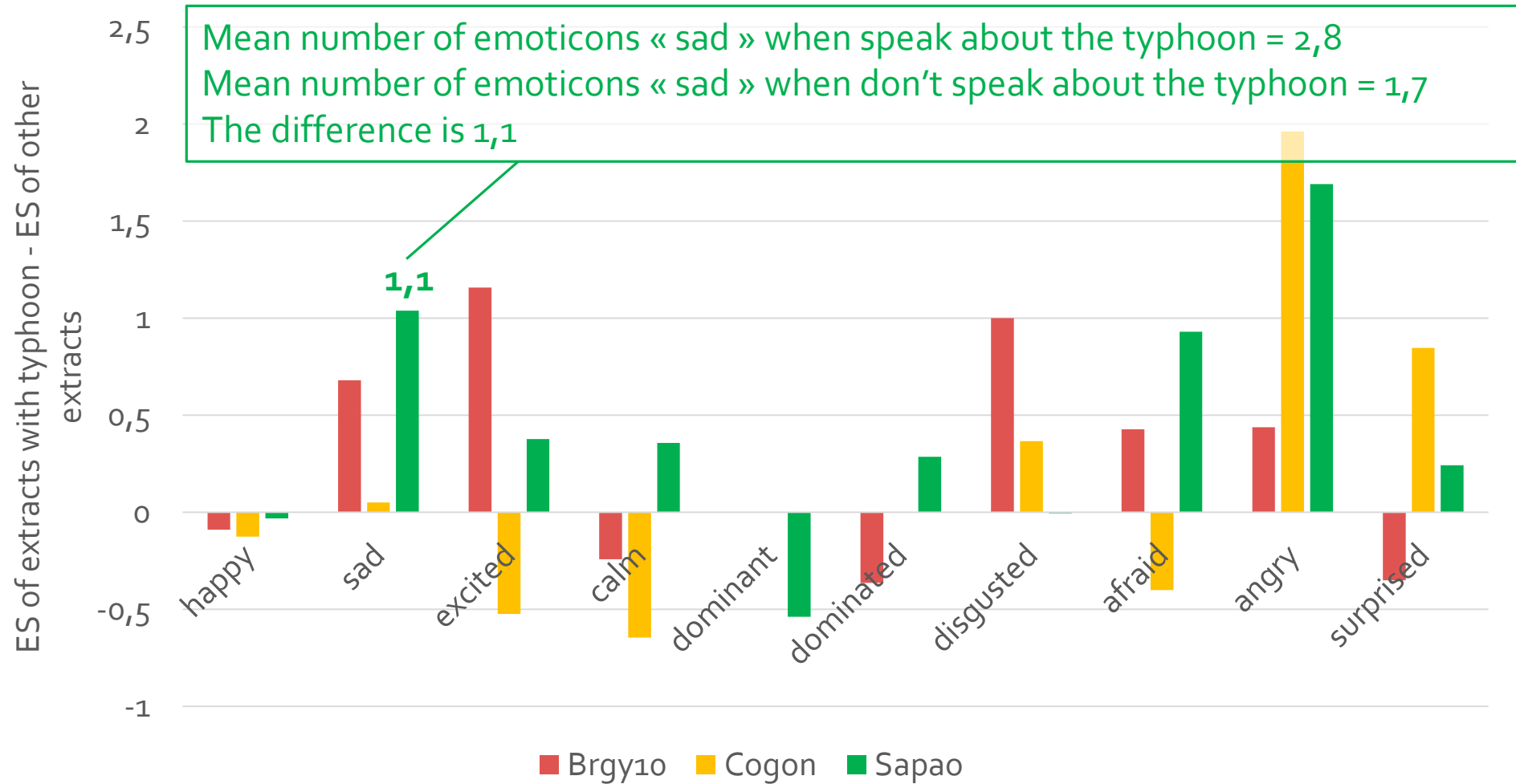
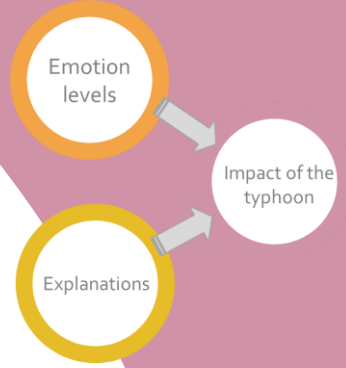


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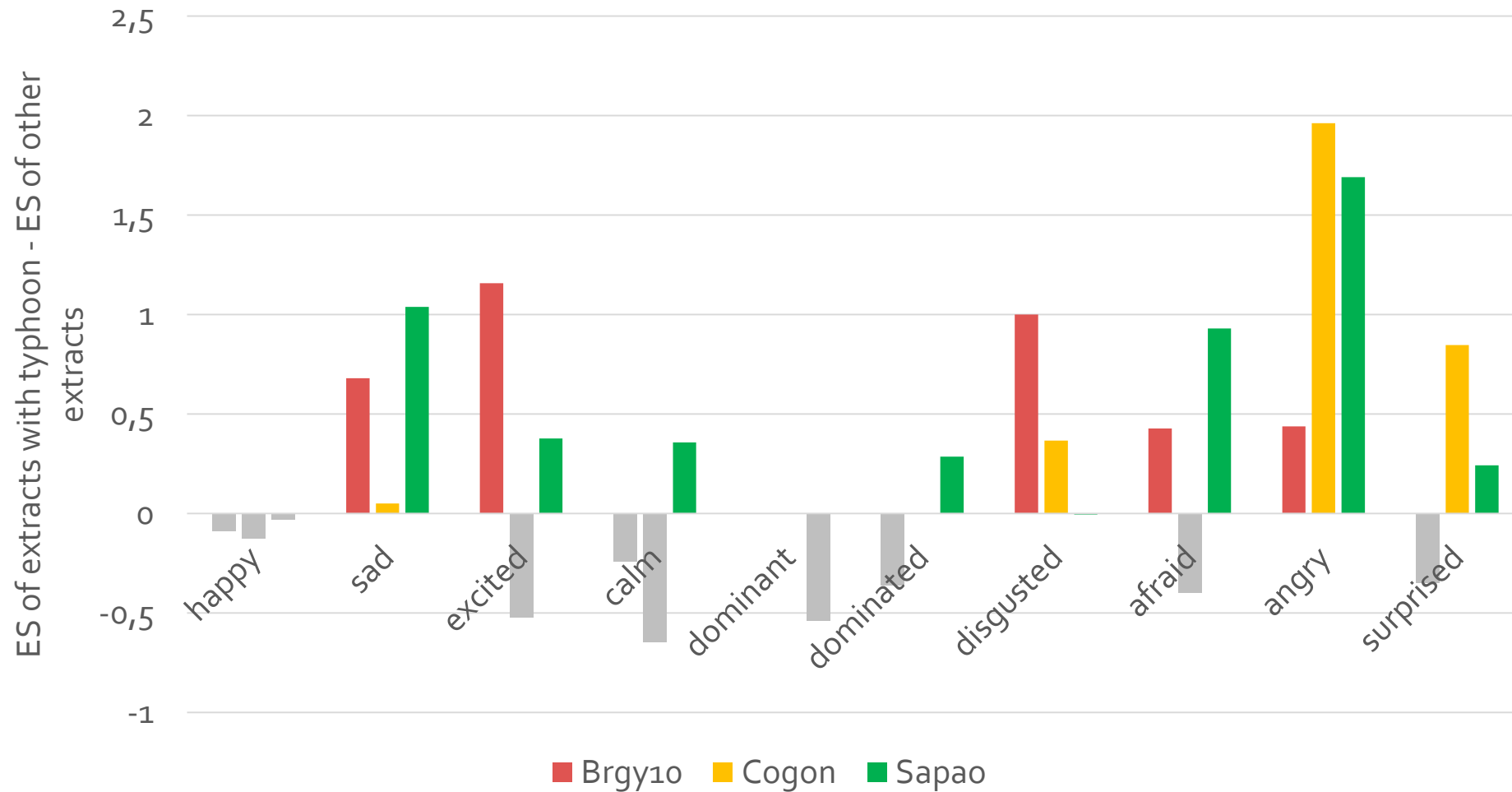
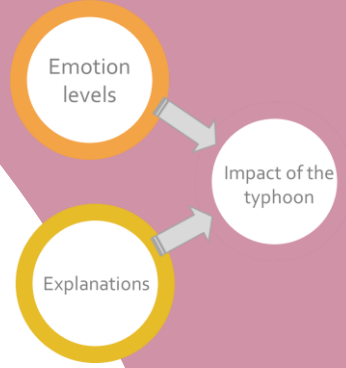
Surprise, sad, afraid, disgusted and angry are mainly related to the typhoon experience but not only

In a lesser extend, positive emotions as happy and calm are also related to the typhoon

Impact of the typhoon: Emotion Strength (EmS)

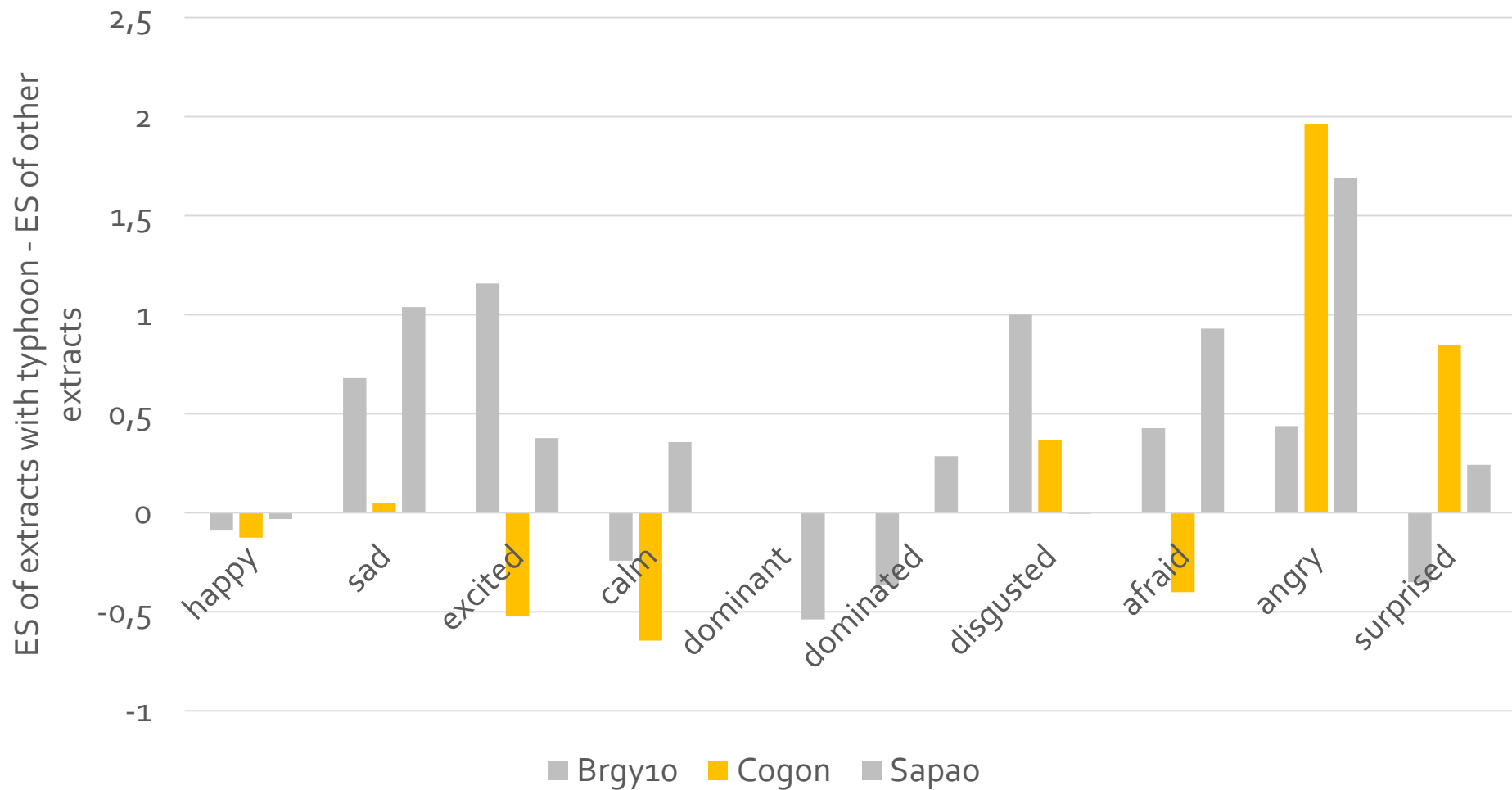
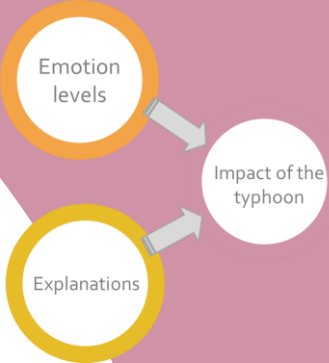


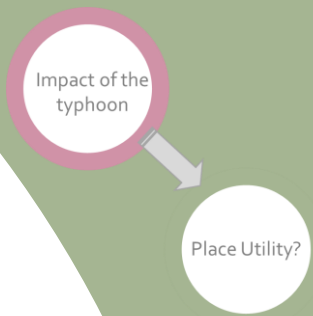
The emotion strength of **sad, excited, disgusted, afraid, angry** and **surprised** is **higher** when people speak about the typhoon compared to when they don't speak about the typhoon



In Cogon: No storm surge during the typhoon -> less damages

Interpretation is not straightforward: why more disgusted, angry and surprised than in the other barangays? Why relatively less calm?





Place Utility?

What kind of informations do the data provide about the impact of the typhoon and how does it relate to place utility?

Hit by typhoon = lower place utility?

- Plurial effects instead of negative vs positive
- Positive middle term impact: slow return to normal

Place Utility?

Do emotion levels inform place utility?

Yes

But representativity issue: choice of the pictures

May be more interesting to create various indicators based on the explanations



Emotion levels

The diagram consists of two circular nodes. The first node, located at the top left, is an orange circle with the text 'Emotion levels' inside. A grey arrow curves from this node to a second node on the right, which is a white circle with a grey border and the text 'Place Utility?' inside.

Place Utility?

Place Utility?



Do explanations relate to place utility?

Yes

But how?

Excited to go home -> ? -> satisfaction to be integrated in this place

Why did people stay?

	owned_house_and_lot	no_other_place	near_livelihood	near_social_service	family_around
<i>Brgy10</i>	0.5	0.35	1	0.2	0.1
<i>Cogon</i>	0.43	0.24	0.95	0.05	0.14
<i>Sapao</i>	0.5	0.4	0.85	0.05	0.15
<i>total</i>	0.48	0.33	0.93	0.1	0.13

UN-Habitat survey, 2014

Why did people stay?

Does place utility inform why people decided to stay after the typhoon?

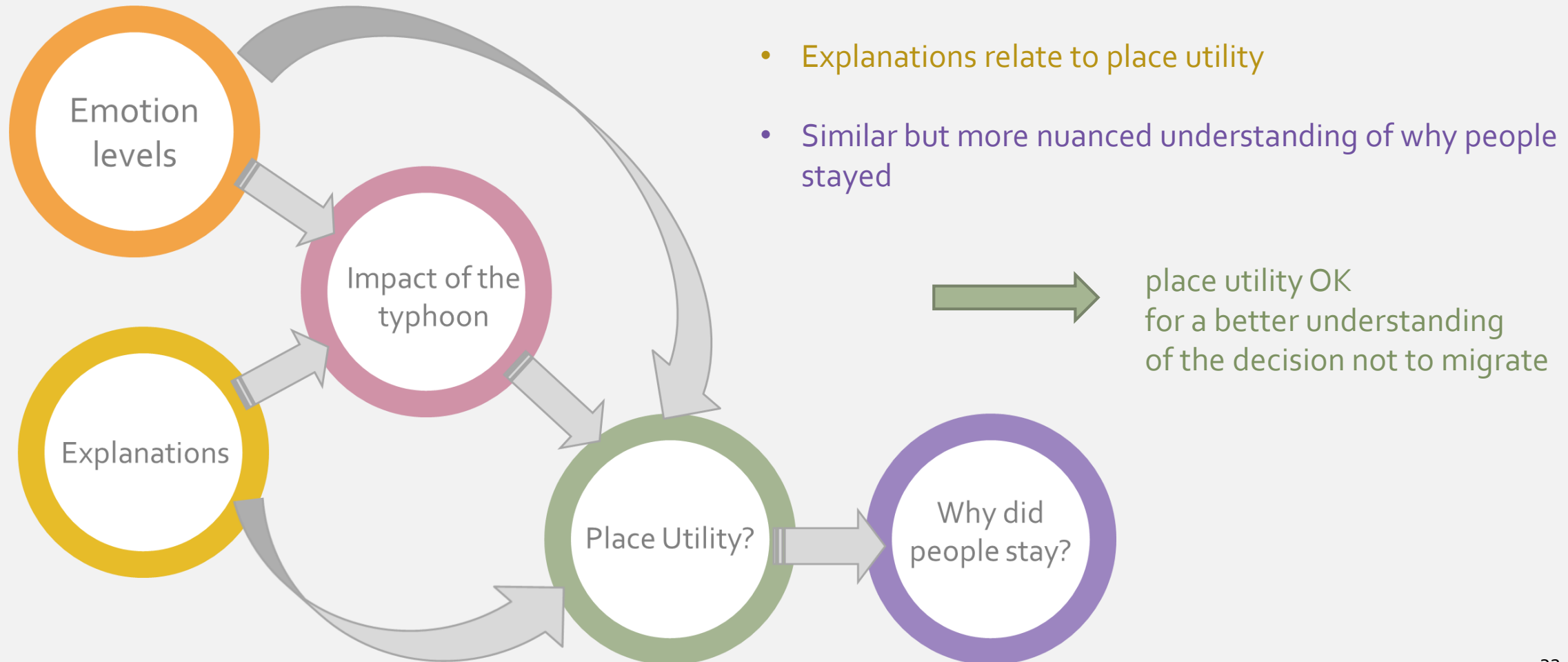
Livelihoods, owning a land, social services, etc. are represented in our place utility indicator(s)

But more nuances, not necessarily all negative or all positive

Positive emotions are dominant in total

Conclusion

- Impact of typhoon: complex emotion patterns and slow return to normal
- Emotion levels = ok measure but representativity issue
- Explanations relate to place utility
- Similar but more nuanced understanding of why people stayed



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