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Get ready for the flood! Risk-handling styles in Jakarta, Indonesia

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Ethical considerations

During none of the floods, fires or other emergency situations described in this thesis, I was ever directly asked for financial support by residents. This surprised me, as I had expected before heading to the field that riverbank settlers would perceive me as a potential source of aid. However, in the field such hopes or expectations were never explicated towards me by residents. On the contrary, I was sometimes praised by riverbank settlers for the fact that I contributed relative high amounts of donation money (but still 'unsuspicious' quantities according to local standards) for people in need in the kampong leader's irregular accumulation rounds.

As noted in chapter 5, in cases of emergency, such as illness or death, it is usual for the community to offer financial support to fellow residents. On average, about Rp 130, 000 is usually collected and donated.²³³ The fact that I always contributed Rp 5,000 to Rp 10, 000 to these small-scale risk transfer mechanisms, was considered an indicator of generosity: my neighbours contributed on average Rp 3,000.

These –rather undeserved- praises and the fact that I was *not* asked for more financial help , can perhaps be explained by the gossip that started to circulate widely after my settling in in the kampong. Residents told each other that I was a relatively poor Westerner (some even believed that I was 'homeless' in the Netherlands), and that my relative poverty had led me to reside in a poor, flood-prone kampong instead of in a wealthier neighbourhood in Jakarta. It was also argued directly towards both me and my research assistant that I simply *had* to be poor, because 'otherwise Roanne would never have lived in this slum.' The fact that I was never seen to take a taxi but rather travelled through Jakarta by foot, bike or public transport (which I did not because of financial concerns, but in order to accompany my neighbours during their trips, as they could not afford to travel by car and mostly not by public transport either), and the fact that I daily ate the culturally low valued 'poor people's food' that was sold by residents, were also taken as indicators of my assumed 'poverty'.

Of course, I am well aware that respondents might still have perceived me as a poor yet poor *Western* inhabitant, which means that they might have perceived me as a potential source of aid and financial support nevertheless, even though they never expressed this towards me. For example, people knew that at the least I must have had enough money to pay for my flight-ticket from the Netherlands to Indonesia. Some people also knew that I had a laptop with me (even if it

²³³ Note that the funds raised are unlikely to be sufficient if someone is seriously ill. The cheapest room rates in government hospitals usually cost around Rp 200,000 to Rp 300,000 per day, while medicine and treatment has to be paid for extra. This means that, if a resident suffers, for instance, dengue fever, the accumulated money from the community will by no means be enough to afford treatment in the hospital. Also, it is important to acknowledge that some residents are excluded from these local donation systems. I describe an example of such exclusion in chapter 5.

was generally assumed to be owned by my research assistant), and everybody saw that I often carried a photo camera with me. The un-outspoken hopes or expectations that people might have based on such observations might have biased my research in ways I was not fully aware of. Nevertheless, regarding my research position in the field I deem it positive that people generally believed that I was not rich enough to offer much aid. Because of that persistent belief in the kampong, my role as a researcher could remain somewhat neutral.

That having said, let me underscore that, on an ethical and personal level, I *myself* was clearly well aware of the fact that I could, in some cases, offer people much more aid and financial support than I overtly did. This awareness created feelings of guilt and doubt about my involvement with respondents during different periods of my fieldwork. For example, if people turned ill and indicated that the demanded medicines were too expensive, I was torn between the trigger to support them financially, and my fear to ruin my 'neutral' research position. Moreover, I feared that if I would help one family, others would probably soon hear about it and turn to me for help as well, while, even I, as probably the wealthiest inhabitant of Bantaran Kali, was by no means able to fulfill the many financial needs of all my neighbours. A similar ethical dilemma arose when a fire broke out in Bantaran Kali and hundreds of people became homeless – of course I wanted to help them, but I was also worried of losing my own 'poor' image in the kampong.

Eventually, I decided to contribute financially both overtly through the above described donation, and, in some urgent cases, also anonymously. Hence, after the above mentioned fire or in various other situations in which residents were in direct need of cash, I sluiced some money to the owner of a foundation involved in the flood-management of Bantaran Kali (introduced in chapter 5). Next, my research assistant accompanied the employees of this foundation in handing over the money to residents in need. These employees acted as if it were they who had accumulated the money. In the case of illness, no cash was given to residents but instead treatment or medication were directly paid for by me via the same system. In the case of the fire, house materials for victims who had become homeless and had no means to recover autonomously were paid for – again via the foundation. In each of these cases, this indirect way of working had the benefit of experiencing some relief of my guilty feelings without losing my 'neutral' position as a researcher.

At the end of my fieldwork, I also decided to pay for the full higher education of two of the children who participated in my English classes. This time I directly translated the money to the school, via the bank account of my research assistant. Both talented and very eager to follow Higher education but born in families that could by no means afford the educational costs, these children are now – at the moment I am writing this chapter- working steadily towards becoming a car mechanic.

Methods used in the field

Name of the methodology	Type of data set	Total no. of participants	Date	Data used for analysis of:
Risk Mapping	Combination of qualitative and quantitative data	20	14 August 2010	Risk cognition
Group Interview with kampong leaders and informal leaders	Qualitative	6	17 August 2010	Risk cognition
Pilot-study in-depth Interviews	Qualitative	30	August - September 2010	Risk cognition; cultural constructs of risk
Test-survey on risk-handling practices	Quantitative	50	August - September 2010	Risk-handling practices; cultural constructs of risk
Formal survey on risk-handling practices	Quantitative	130	November 2010 – February 2011	Risk-handling practices; cultural constructs of risk
Socio-economic survey	Quantitative	130	November 2010 – January 2011	Material vulnerability
Psychometric survey on self-efficacy	Quantitative	130	February 2011 – April 2011	Habitus
In-depth Interviews	Qualitative	130	November – July 2011	Cultural constructs of risk; habitus; risk-handling practices
Participant Observation	Qualitative	130	August 2010 – July 2011	Cultural constructs of risk; material vulnerability; habitus; risk-handling practices
DOSPERS scale	Quantitative	130	November 2010 - February 2011	Cultural constructs of risk

Appendix C

Risk-handling practices in Bantaran Kali

No.	Behavioural risk-handling practices related to floods
1	Moving (expensive) belongings to higher level in house (very early, e.g before rain season starts)
2	Not buying valuable furniture as to avoid potential losses
3	Thinking about best response-plan in case of emergency
4	Discussing response-plan with neighbours; ordering them what to do
5	Learning children how to swim
6	Considering to move away to neighbourhood with less floods; orienting on moving house
7	Building higher level on house
8	Investing in ceramic tiles
9	Not throwing waste in river
10	Cleaning river from waste
11	Gathering information about risk of flooding from government
12	Gathering information about risk of flooding from neighbours
13	Storing basic food items
14	Saving money as buffer to be used when risk occurs
15	Preparing or buying 'flood foods'
16	Strengthening house with concrete
17	Contacting sluice-gate keepers via HT to get information about water level
18	Placing properties in friends' or family members' house (early; long-term)
19	Checking water height in sluice Manggarai (autonomous)
20	Checking water height in Ciliwung river (e.g. with stick, autonomous)
21	Moving valuables to place of evacuation (right before or during flood: short term)
22	Evacuating to 2nd house in rural kampong (early)
23	Evacuating to <i>kelurahan</i> shelter (early evacuation)
24	Evacuating family to foundation shelter (early evacuation)
25	Evacuating family to another place (e.g. Friends, family, hotel, church) (early evacuation)
26	Helping other people with evacuating
27	Warning other people for flood
28	Gathering evacuation materials (boats, blankets)
29	Calling police for help
30	Locking or blocking windows and doors
31	Guarding the house during a flood (prevention from stealing or eviction)
32	Preparing important documents (laminating, keeping them in a special bag or place)
33	Cooking, sharing food
34	Placing motorcycle in safe place (early)
35	'Cleaning' house and surrounding (e.g. binding with robes so that values won't be flooded)
36	'Do nothing'
37	Gathering family on second floor of house to await the flood from there
38	Moving valuables to second floor in house (ex-poste: during flood)
39	Clambering on top house (to wait for the water to recede)
40	Evacuating to second house in rural kampong (ex-poste: during or after flood)
41	Forced evacuation to <i>kelurahan</i> shelter (ex-poste: during flood)
42	Forced evacuation to foundation shelter (ex-poste: during flood)
43	Forced evacuation to streets (ex-poste: during flood)
44	Returning values and family to house (ex-poste: during flood)
45	Cleaning house with flood water (fast return; water still in the house)
46	Cleaning house with river water (late return; water receded)
47	Re-buying lost values
48	Repairing or rebuilding house

49	Discussing experiences with others in neighbourhood
50	Cleaning neighbourhood (or helping others in their houses) after flood
51	Discussing risk of flooding with government – officials
52	Paying extra attention to (danger for) hygiene (autonomous; no help of external health-actors)
53	Getting injection/medicines to avoid disease (free medical health <i>kelurahan</i> or foundation)
54	Getting injection/medicines to avoid disease (doctor in private clinic)
55	Using savings (money accumulated beforehand) to invest in house again
56	Working extra hard to make money after flood to be able to invest in damaged house
57	Asking kampong leader for financial support
58	Asking priest (foundation) for financial support
59	Selling household goods to get extra incomes
60	Borrowing money from neighbours or family
61	Borrowing money from moneylender against interest rate
62	Cutting off educational fees children in order to restore damage
63	Cutting off consumption in order to restore damage
64	Re-storing important documents

No.	Cognitive risk-handling practices related to floods
65	Distraction (behaviour)
66	Distraction (emotional)
67	Positive thinking
68	Religion/praying
69	Advice seeking
70	Passivity
71	Suppression of information
72	Substance use
73	Humour
74	Alter future plans
75	Worry (rumination)
76	Anxiety amplification (getting more anxiety)
77	Indecisiveness
78	Experiencing uncertainty
79	Dreaming of living in flood-prone neighbourhood
80	Emphasizing self-efficacy
81	Blaming self
82	Blaming others

No.	Practices exhibited in relation to poverty-related risk
1	Saving money at bank
2	Saving money in house
3	Saving money via local system (eg. <i>arisan</i>)
4	Investing in gold
5	Gambling (when aimed to win and make profit)
6	Investing in children's education (long-term planning: expected returns in future)
7	Living on budget (planning finances ahead)
8	Participating in <i>raskin</i> (subsidized rice program of the government)
9	Investing in a business
10	Participating in cooperation
11	Arranging LSKM (health program for poor people, run by government)
12	Arranging BOS program (discount on educational fees for Elementary School)
13	Cutting off on children's education in times of illness or other financial stressors (not floods)
14	Borrowing money from family or neighbours in times of illness or other financial stressors
15	Borrowing money from bank (or <i>bank keliling</i>)

16	Selling goods to get extra income in times of illness or other financial stressors
17	Cutting off on consumption in times of illness or other financial stressors
18	Spending savings in times of illness or other financial stressors
19	Asking external aid-institutions for financial support in times of illness or other financial stressors
20	Closing down one's business as to avoid risk
21	Gambling (when aimed to earn back needed expenses after disaster)
22	'Do nothing'

NB: for cognitive risk-handling practices related to poverty-risks, see cognitive risk-handling practices related to floods.

No.	Risk-handling practices related to eviction
1	Investing in (fake) Identity card
2	Gathering information
3	Socializing political people
4	Investing in second house
5	Preparing for demonstration/protest
6	'Do nothing'
7	Awaiting offer compensation from city government

NB: for cognitive risk-handling practices related to eviction, see cognitive risk-handling practices related to floods.

Cluster analysis

This study is based, first and foremost, on an analysis using interpretative and qualitative methodology. However, I have also argued that it is important to integrate quantitative methods into an anthropological study. With this in mind, I have tried to do so in my study, and it seems to me relevant to evaluate the usefulness or otherwise of such an integrative approach. In this appendix I present the results of the quantitative cluster analyses that I carried out.

First of all I take some space in this appendix to discuss how the quantitative analysis was carried out. Second, I report where the results of my quantitative analysis supported or differed from my qualitative and anthropological interpretation, showing that many of the points of similarity and divergence are also statistically significant. Finally, I make some suggestions about how my approach to combine quantitative and qualitative methods can be evaluated.

As noted in chapter 2, a complete list of all the risk-handling practices exhibited by all respondents was made during fieldwork on the basis of in-depth interviews and participant's answers to a formal survey on risk-handling practices. In the qualitative analysis of these methods, all sorts of details and narratives could be included, but for the quantitative analysis I had to devise a way to 'measure' and quantify this behaviour. I did this by transforming the narrative responses from the interviews and the survey on risk-handling practices into binary data: it was noted whether or not a respondent exhibits a certain risk-handling practice (yes or no). With these binary data, a cluster analysis could be run to see which of the practices are commonly exhibited by people, and which practices are used by whom.²³⁴

To find patterns (clusters) in the behaviour of study participants, we used a Hierarchical Cluster Analysis. Hierarchical Cluster Analysis is the primary statistical method for finding relatively homogeneous clusters of cases based on measured characteristics. It uses the dissimilarities or distances between objects when forming the clusters, and is recommended in the literature for working with a relatively small data set, and especially when the number of clusters there are to be found in the data are not known beforehand (IBM SPSS Statistics; Mooi & Sarstedt, 2011, p. 244; Norušis, 2004, p. 363). In this hierarchical cluster analysis, we have made use of the cluster method 'between-groups linkage,' which was the one we deemed most appropriate for the goal of this

²³⁴ I have co-operated for this survey-analysis with scholars who are more familiar with cluster analysis than I am, and for that reason in this appendix I speak of 'we' when discussing the process of analyses. Close cooperation was established with social psychologist/ behavioural economist Dr. Michel Handgraaf, researcher at Columbia University's Center for Research on Environmental Decisions (CRED) and Wageningen University; and Ms Marije Cornielje, Rural Development Sociology, Wageningen University. In later stages of this cluster analysis, I have also cooperated with Mr Elmar Janssen (PhD – candidate in Sociology at UvA) and Dr. Marc van der Wardt (Sociology, UvA).

research.²³⁵ Because I used binary data, I chose to use the Square Euclidean Distance measure (based on the number of discordant cases) to specify distances between clusters (Mooi & Sarstedt, 2011, pp. 245-246; Norušis, 2004, p. 364).²³⁶

The first step in the analysis concerned the number of clusters the SPSS analysis would find on the basis of differences and overlaps in risk-handling practices of the study participants. My qualitative analysis had already led me to distinguish four styles and one rest category, so I was interested to find out whether a cluster analysis would distinguish similar groups. The result from the hierarchical cluster analysis carried out in SPSS confirmed that it is possible to distinguish at least five categories of human risk-handling styles, each representing a different cluster of behavioural and cognitive risk practices that are exploited in a context of normal uncertainty to handle the risks of floods, poverty and evacuation.²³⁷ Progressing with five clusters, next we compared the results of the SPSS cluster analysis with my own qualitative analysis. We had to consider whether these analyses assign the same people to the same behavioural groups, and if so on what basis? I provide a visual comparison of my own categorization and the clustering as proposed by SPSS in Figure 3, and here I will answer these questions by comparing my interpretation of styles and the results of SPSS cluster analysis by pointing out the similarities, where the results supported each other, and the differences between them, where they diverged.

If we look at the five behavioural clusters that SPSS distinguishes, it becomes clear that there are some strong overlaps with the ways in which I have categorized people's practices; but there are also some differences in the ways in which SPSS classifies study participants into behavioural clusters. Let me start with the overlapping results: one out of the four risk-handling styles I distinguished is clustered exactly in the same way by SPSS. This concerns the people representing the *orang susah* risk-handling style. In other words, on the basis of the quantitative data about people's risk-handling practices, SPSS recognized sufficient overlaps in risk behaviour among the respondents whom I call the *orang susah* to define them as a behavioural cluster that differs from the other four. Hence, regarding the *orang susah*, SPSS fully supports my categorization.

²³⁵ The three methods most appropriate for binary data are the between-groups linkage, nearest neighbour (= single linkage) and furthest neighbour (= complete linkage). Often the three methods produce a very similar set of clusters (IBM SPSS Statistics). In the between-groups linkage method SPSS computes the smallest average distance between all group pairs and combines the two groups that are closest. The procedure begins with as many clusters as there are cases (here: 130). It starts with each case as a separate cluster, and then combines the clusters sequentially, reducing the number of clusters at each step until only one cluster remains. The researcher then decides which number of clusters is most relevant for the aim of research.

²³⁶ For binary data SPSS has a plethora of distance measures. However, the Square Euclidean distance is a good choice to start with and very commonly used. See for example <http://www.cs.uu.nl/docs/vakken/arm/SPSS/spss8.pdf>, and http://www.originlab.com/www/helponline/origin/en/Category/Cluster_Analysis.html, both retrieved 14 October 2013.

²³⁷ A cluster analysis always offers different cluster solutions to a data set. In this case, both the agglomerative analysis and the cluster-membership analysis indicated that five or six clusters would show the clearest patterns in group behaviour. For the specific aims of this study, it seemed most useful to progress with five clusters – in this way I could compare these with the four clusters and the rest-category that I had defined on the basis of my qualitative analysis.

Another finding of mine that was largely supported by SPSS regards the risk-handling style of the *orang ajar*. This group of respondents was clustered in almost the same way by my qualitative analysis and the SPSS analysis. I placed 18 respondents into this style category; SPSS categorized these same 18 respondents into one cluster, but added two individual respondents that I had categorized differently, which I will explain below. Therefore, I can safely conclude that the results of the SPSS analysis strengthen my findings about the two risk-handling styles of the *orang susah* and the *orang ajar*.

However, there are also two differences that need to be discussed here. The first important difference is the fact that SPSS has combined two of my styles (the *orang siap* and the *orang antisipasi*) into one cluster. This makes sense, as many of the behavioural risk practices of study participants in these two styles overlap – something which I visualize in Figure 4. However, my qualitative analysis points out that there are enormous differences in the risk-perceptions of respondents in both of the groups that were not included in the SPSS-analysis, as these data were not quantified. This biases the results of the SPSS analysis. As I describe in chapters 3 and 6 respectively, *orang antisipasi* are very concerned with floods and actively seek to protect their personal safety and livelihoods against flood risk, while *orang siap* have a high level of mistrust towards the government and deem eviction the most pressing risk in their lives.²³⁸ In practice, both of them may exhibit similar behaviour, such as borrowing money from expensive money lenders after floods; but, while *orang antisipasi* generally do so to recover from floods, *orang siap* generally do so to move out of the neighbourhood or to invest in protection against the government. SPSS measured correctly that both *orang antisipasi* and *orang siap* actively try to take similar action in the face and aftermath of flooding, but it could of course not take into account the fact that they do so for different reasons: *orang antisipasi* aim to decrease the negative effects of floods, while the main aim of *orang siap* is to protect themselves against the city government. Indeed, the SPSS analysis simply cannot encompass all such relevant information for an interpretation of risk-handling styles. Another example of the type of information that was lacking in the SPSS analysis and hence biased its results, is provided by their nicknames. The fact that study participants characterize themselves in a particular way and go by a certain nickname, both of which support my categorization of styles rather than the broad clustering of SPSS, could not be taken into account in the quantitative survey and hence not in the SPSS analysis, while this information was very important for the qualitative analysis of risk-handling styles. Hence, while I acknowledge the fact that some of the risk-handling practices between people in these clusters overlap, I find it justifiable to consider them as representatives for two very different risk-handling styles.

²³⁸ See Figure 6 for a comparison of the risk-perceptions per risk-handling style.

Another difference between my categorization of styles and the SPSS cluster analysis concerns the fact that SPSS has split up the study participants from my rest category into two separate clusters. As already noted, I do not believe that it is appropriate to speak of a fifth cluster instead of a rest category for two main reasons: first, the study participants in this rest category do not exhibit *other* practices different from those of their fellow residents, but rather they exhibit a mixture of practices that occur in two or more of the distinguished styles; second, the differences between people's practices within this rest category are enormous, and the same must be said for the in-group differences of the two clusters that SPSS divides them into. While SPSS correctly shows that the practices of people in these two clusters do not resemble the patterns of behaviour that define each of the four clusters (which was my main reason for ascribing these people into a separate rest category), it overlooks two other important aspects of my analysis. For one, it placed 14 out of my 130 respondents into a separate cluster because these people's answers in the survey indicate that they generally exhibit *fewer* practices of risk behaviour than others do. That is, they frequently answered 'no,' to the survey questions about whether they make use of a particular practice. That being said, I find it much more important to take into account those few occasions in which these people in this category answered 'yes'— if we do this we see that their answers never resembled a new risk-handling practice that does not occur in any of the four defined major risk-handling styles in Bantaran Kali. This suggests to me that they do not exhibit practices that must be considered part of a fifth style, rather these people should be categorized somewhere in the grey zone of the four patterns of risk behaviour that are most common in Bantaran Kali.

A second aspect of my analysis that remains neglected in the SPSS cluster analysis, concerns the fact that there is hardly any coherence amongst the people in these two additional clusters proposed by SPSS. SPSS clustered these respondents into two separate clusters on the basis of their mean score on variables, each variable representing a risk-handling practice. It is certainly true that these scores are sometimes higher or lower than in other clusters, and therefore it could be argued that these clusters must be separated from the others. What SPSS does not take into account in such clustering, however, is the deviation that exists *within* clusters. Close examination of the in-group differences shows that the differences in scores between individual cases in these two additional clusters (as well as in my single rest category) is rather large, while the internal differences in other clusters are generally much smaller.

A concrete example is helpful to explain this problem: the cluster analysis of SPSS found that *on average*, the respondents in one of the two additional clusters relatively often exhibit a cognitive risk-handling practice that is associated with fatalism. However, there are two reasons why such observation is of little analytical value for the aims of this study. First of all, it was already remarked

that the standard deviation in both additional clusters (as well as in my one rest category) is extremely high. This means that, even if on average the people in the additional cluster may relatively often exhibit this practice, this tells us nothing about the internal coherence of the cluster. In fact, a closer examination of this additional clusters shows that it is the case that some of the respondents in the cluster make use of this practice very often, while others never do. The same internal incoherence exists for many other risk-handling practices on which SPSS has based its clustering: for example, those of 'blaming others' , 'moving valuables to higher level in the house' and 'formulating a response-plan in case of emergency.' As already noted, these practices occurred in all other clusters, and outcomes are blurred by extremely high standard deviations on these practices - in those clusters as well as in both these two additional clusters. These are only some of the examples that help to show that the mean outcome may seem significant for a formation of clusters, but the internal differences are so large that it would be inappropriate to speak of additional coherent clusters.

Also, as I've already argued, the practices used by people in these two additional clusters are not different from the practices that are also common in other styles. To use once again the example of the cognitive risk-handling practice that is associated with 'fatalism': it is not only exhibited by respondents in the additional clusters, but also fairly often by representatives of my *orang susah* style. For both these reasons, I feel comfortable stating that the additional clusters that SPSS distinguish do not resemble a fifth style, let alone a fifth and a sixth style. Instead, it seems to me more precise to categorize these respondents into a single rest category.

Now that I have highlighted the main differences and overlaps between my own categorization and the SPSS cluster analysis, let me briefly evaluate to what extent my attempt to integrate quantitative methods (such as surveys and a cluster analysis) into my mainly anthropological study has been fruitful. On the one hand, I believe that these quantitative methods have been highly useful for this study, as they have helped me to cross-check and quantify findings that had otherwise looked purely interpretative. The cluster analysis supported my categorization of the *orang ajar* and the *orang susah*, thereby showing that my findings are statistically significant. It also enabled me to consider whether the material vulnerability factors discussed in chapter 1 were relevant to each cluster – a topic that is discussed throughout the empirical chapters (see also Tables 3.1 - 3.3 for the main outcomes of this analysis). Most of all, the quantitative method of a psychometric survey appeared very helpful in further exploring the topic of self-efficacy, not discussed here but elaborated in chapter 2 (see also Table 4). If this topic is, as seems obvious, non-tangible and hence complex to grapple with, a quantitative survey proved helpful in calculating it

into an analysis and hence enabling me to show most clearly the significance of self-efficacy for each cluster.

At the same time, it has become clear from the above evaluations that a quantitative analysis – and perhaps especially a cluster analysis – always masks details and leaves out nuances, such as reasons, meaning, interpretation and connection. This became clear from the fact that SPSS grouped a whole bunch of respondents into one cluster, based on overlaps in binary data. However, from the more complex, qualitative data, I became convinced that this concerned not one, but two different behavioural clusters (see chapters 3 and 6 for descriptions of these clusters of styles). A similar problem arose when SPSS formed clusters from respondents whose behaviour I interpret as highly differing. Without denying the overlaps that SPSS recognized between some of these informants' practices, these overlaps seemed to me not at all a convincing basis for one or even two behavioural clusters. Instead, I chose to categorize these people into a rest category. It seems to me that this difference in interpretation has to do with the fact that a cluster analysis was used to group behaviour, while my analysis looks wider than that and tries to define *styles*. What this outcome shows is that while correlations may be statistically significant in the context of fieldwork they might not be significant at all. It is up to the researcher to interpret such findings in a way that seems logical and realistic.

I therefore conclude that a quantitative method, such as a cluster analysis on the basis of a survey, can be a useful additional tool to use for an anthropological study of risk-handling styles; but only if the outcomes are critically compared and cross-checked with outcomes that are derived in more qualitative ways, such as by observation and in-depth interviews, to check the accuracy of data.

On who not to cluster

In chapter 2 and in Appendix D it was noted that I have not categorized all study participants into one of the four behavioural clusters, because I feel that these people's risk-handling practices do not resemble the typical characteristics of any of the clusters. In order to clarify my decision, it is insightful to consider two typical examples of respondents who, in my interpretation, could not be categorized unambiguously in any of the four risk-handling styles described in this thesis.

The first example concerns a female respondent who, according to her neighbours, was a typical *orang susah*: a person whose main risk-handling practice involves a reciprocal relationship with a patron. From interviews with and observations of this female respondent, I however learned that, in former years, she might indeed have been categorized as such, while nowadays such categorization seems inappropriate. Speaking about former times, the respondent indicated that she had exhibited many of the practices that are typically associated with the style of *orang susah*. She had invested much of her time and energy into the establishment and maintenance of a relationship with a patron. However, she gave up her efforts years ago, as she felt that the patron did not help her sufficiently in return for her investments. My observations of her present behaviour confirmed this. During my fieldwork, this woman was not once in contact with the man who formerly acted as her patron, nor did she try to seek contact with him – or with another patron, for that matter. Neither did she try to invest in social relations with a resourceful actor involved in flood management. And while this woman had been financially supported by her patron during the floods in 2002 and 2007, and also during smaller floods within that period, in later years she received no further help from him and instead recovered from floods by herself. Therefore I concluded that it would be erroneous to categorize this woman as a typical *orang susah*.

Instead, I observed that the practices that she nowadays exhibits in the face and aftermath of floods overlap in part, though not completely, with the style of the *orang antisipasi*. For example, this woman makes use of short-term strategies, such as keeping her children home from school after floods to save money and have them help her repair or replace lost goods, or by borrowing money from money lenders, against high interest rates, for the same goal of flood recovery. Hence, instead of accumulating money as a buffer before a risk event, this woman exhibits a short-term practice that is merely meant to recover – just as *orang antisipasi* often do. However, quite unlike *orang antisipasi*, the practices that this woman exhibits are not autonomous. Instead, she is involved in local saving systems such as *arisan*, but she does not accumulate money as a buffer to be used during a flood event. She frequently spends it on goods, such as toys for her children. She is also a

member of a religious group in which women study the Quran. Hence, she is not at all excluded from social support groups in the neighbourhood in the way *orang antisipasi* generally are. Thus she could not be categorized in that behavioural cluster, nor in any of the other three discussed in this thesis.

A second example of a respondent who, in my opinion, could not be categorized into one of the four clusters described in this thesis concerns a male respondent. This man was known not to take any preventive actions in the face of floods, because he believed that such actions would not be able to help him anyhow. Instead, he argued that it was up to Allah to decide whether he would remain safe or not. An example which illustrates this man's behaviour is the fact that he did not evacuate from his house after flood-risk warnings and not even when the water had already entered his house, because he believed that Allah would protect him – or not. Similarly, this respondent had not saved money to be used as a buffer after flood events and as a consequence, when his furniture and household items were inundated and damaged, he had no money to replace or repair them. He eventually decided to leave them broken and told me that he regarded rebuying goods 'useless': 'I have decided no longer to invest in furniture. If Allah wants me to have furniture, he will give it to me. If not, I can buy as much as I want and future floods will damage them anyhow.' This man's behaviour points to an interesting exceptional case for this study, because he acted and perceived risk in a way that was very different from all the other study participants. Even if it was common in Bantaran Kali to narrate that one's safety is 'up to Allah' (reflected, for example, in the often expressed, *Insha'Allah*), most people did by no means leave it up to Allah when floods entered the kampong but instead took action to protect their safety. To my best knowledge, this man was the only one who did not. He was therefore described by fellow residents as a religious fanatic or simply as crazy, rather than called by a nickname that resembles one of the four risk-handling styles defined in this thesis.

In both these individual cases, it seems clear to me that the way in which these respondents handle flood risk does not reflect one of the four most common behavioural patterns that are definable in Bantaran Kali. The practices of these people often resemble or overlap with those from the four most common risk-handling styles, but in not sufficient number to be unambiguously categorized into one of them. Therefore, acknowledging the complexity and inconstancy of human behaviour, this study places these people's behaviour in a rest category.