Appendix C: Codebook

General Coding Rules

1. Goal of this analysis is to see how municipal administrative staff express confidence in their personal ability to achieve a (more) sustainable mobility system in Lüneburg by 2030.
2. Unit of analysis are interviews conducted with the participants two months before and two weeks after a workshop intervention. Furthermore, the audio transcript of the workshop intervention will be coded. The break and the goodbyes will not be coded.
3. Codes will be assigned to the "level of meaning", that can be chunks of text that either span few words or entire paragraphs, if they include one idea.
4. Each "bit of meaning" should be assigned only one code. If a chunk of text covers several codes, it should be broken down into chunks that only include one code. If a sentence touches on idea A, mentions idea B, and reverts to idea A, this warrants two codings for A and one coding for B.
5. The focus of this analysis is on staff's confidence. Exclude general descriptions of projects or issues in Lüneburg, if they don't express meaning on confidence.
6. Theory based codes are based on the self-efficacy tests by Schwarzer (1999) (which were also used for the pre and post questionnaires) and on the conceptualization of Keeler et al. (in press).
7. Examples marked as yellow are taken from the questionnaire and are preliminary until a matching segment can be found in the data. The English translation (marked as red) needs to be updated and is dependent on the German example.

Codes

Origin	Code label	Name	Full definition	Example (German)	Example (English)	Justification (Why do I code this?)
Theory	Personal +	High general perceived personal self-efficacy	Participant expresses that she **personally can** generally overcome problems and barriers.	Also im Moment, ich bin ja erst anderthalb Jahr da, waren eigentlich die Reaktionen also meistens positiv. Ich überleg gerade.	Well, momentarily, I have just been here for a year and a half, basically every reaction was mostly positive. I have to	General personal self-efficacy is the core conceptualization of confidence in this thesis. "A high general personal

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				Ich hatte glaube ich keine negative Entscheidung bislang. Also von daher ist da schon viel positiv auch zu sehen.	think. I did not have, I believe, a single negative decision [by the council] so far. So, from that perspective there are also a lot of things to see positively.	self-efficacy is correlated with […] better performance […]" (Jerusalem, 2013)
Theory	Personal -	Low general perceived personal self-efficacy	Participant expresses that she **personally** can generally **not** overcome problems and barriers.	Da sabbel ich wirklich schon lange Jahre drin, das war bisher nicht durchsetzbar.	I really talk about this now for years, so far more was just not achievable.	General personal self-efficacy is the core conceptualization of confidence in this thesis. "A high general personal self-efficacy is correlated with […] better performance […]" (Jerusalem, 2013) The inverse is true.
Theory	Team +	High general perceived collective self-efficacy	Participant expresses that she together **with administrational colleagues can** generally overcome problems and barriers.	Es, s, ist immer noch mal dieses gefühlte Einzelkämpfertum, das sich so ein bisschen langsam aufweicht, weil ich Gott sei Dank auch in dem anderen Bereich Staßeningenieurbau so Mitdenker hab, die, die in die ähnliche Richtung gehen.	"There is still this perceived lone-wolf-situation, which slowly seems to decrease a bit, because I have, thank God, in another field accomplices who go in a similar direction."	Achieving sustainability as municipal administration is a team effort. "A group whose members have trust in the team's resources develops an optimistic approach of dealing with shared challenges and to achieve goals, as well as a high willingness to effort and endurance." (Jerusalem, 2013)
Theory	Team -	Low general perceived collective self-efficacy	Participant expresses that she together **with administrational colleagues** can generally **not** overcome problems and barriers.	Und Bildung für ähm, ich schätze diesen Mitarbeiter sehr, aber das, äh, den drehste halt auch nicht mehr um	And education for, uh, I really value this employee a lot, but, uh, you won't turn him around anymore	Achieving sustainability as municipal administration is a team effort. "A group whose members have trust in the team's resources develops an optimistic

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						approach of dealing with shared challenges and to achieve goals, as well as a high willingness to effort and endurance." (Jerusalem, 2013) The inverse is true.
Theory	Steps +	High perceived self-efficacy for achieving gradual improvements	Participant expresses that she can achieve a more sustainable mobility system with gradual improvements.	Im IMK wird auch eine neue Linie drin sein, die das Hanseviertel dann erschließt. Also gerade in der Richtung haben wir hier so ein kleines Modellvorhaben zu haben, um dort gleich möglichst weg von der Automobilität zu kommen.	In the IMK there will also be a new route, which will then make the Hanseviertel accessible. So especially in this direction we have such a small model endeavor, to there get away as much as possible from car mobility.	This is part of the contextualized self-efficacy regarding achieving a more sustainable mobility system. Sustainable development can be achieved by combining incremental steps to a strategy that overcomes several barriers. (Wiek and Iwaniec, 2014) Believing in the self-efficacy to promote such small steps that in sum lead to a more sustainable system encourages to take action and make those steps happen.
Theory	Steps -	Low perceived self-efficacy for achieving gradual improvements	Participant expresses that she can induce gradual improvements but that they don't build towards a more sustainable mobility system.	und das wird auch in von der Tendenz her vielleicht ein bisschen abnehmen, ne, dass man Home-Office macht, ne, dass man nicht mehr äh jedes Mal fährt, wenn man so ne eine dieser sinnigen Telefonkonferenzen, bei denen nie was rauskommt	and that will also given the trend maybe decrease a bit, right, that one does home-office, right, than one does not drive uh every time, when one has on o those useful phone conferences, which never yield anything does, but, uh, I	This is part of the contextualized self-efficacy regarding achieving a more sustainable mobility system. Sustainable development can be achieved by combining incremental steps to a strategy that overcomes

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				macht, aber äh ich glaube das ist so mehr am Rande der Entwicklung, da wird man das äh grundlegende Verkehrsgeschehen nicht mit umkrempeln können. Ein bisschen beeinflussen, am Rande, vielleicht, ne. Aber völlig auf den Kopf stellen, glaube ich nicht. Jetzt krieg ich keinen Punkt...	believe that is more a marginal development, there one will uh not turn the fundamental traffic inside out with. Influencing a bit, marginally, maybe, right. But not turning it upside down, I don't believe. Now I won't get a point.	several barriers. (Wiek and Iwaniec, 2014) Believing in the self-efficacy to promote such small steps that in sum lead to a more sustainable system encourages to take action and make those steps happen. The inverse is true.
Theory	Competence +	High perceived self-efficacy due to high competence.	Participant expresses that she can achieve a more sustainable mobility system because she knows her subject matter very well.	Also ich kann dem ganz schnell demonstrieren, wie man die Barckhausenstraße teilt. Und da Ringe drein macht, rein baut, ins Rote Feld.	Well I can quickly show him how to divide the Barckhausenstraße. Inserting a roundabout, building it into the Rotes Feld.	Confidence in the self-efficacy is linked to the (perceived) competence. Administrators believing in that they know what they are doing are more likely to believe in their self-efficacy. (Keeler et al., in press)
Theory	Competence -	Low perceived self-efficacy due to low competence.	Participant expresses that she cannot achieve a more sustainable mobility system because she does not know her subject matter very well.	Das, da fehlt mir noch die Abschätzung, was das für n Effekt haben könnte, selbst wenn man da massiv investieren würde.	There I still lack the evaluation, what effect that could have, if one invested there massively.	Confidence in the self-efficacy is linked to the (perceived) competence. Administrators believing in that they know what they are doing are more likely to believe in their self-efficacy. (Keeler et al., in press) The inverse is true.
Theory	Commitment +	High perceived self-efficacy due to high commitment.	Participant expresses that she can achieve a more sustainable mobility system because she is very committed to the cause.	Ja, das ist ähm, mein, eins meiner Lieblingsthemen.	Yes, that is, uh, my, one of my favorite topics.	Confidence in the self-efficacy is linked to the personal commitment. Administrators who are personally invested in and committed to the

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						vision of a more sustainable mobility system are more likely to pursue their vision with greater effort, which increases their efficacy and thus likely leads to an increased self-efficacy. (Keeler et al., in press)
Theory	Commitment -	Low perceived self-efficacy due to low commitment.	Participant expresses that she cannot achieve a more sustainable mobility system because she is not very committed to the cause.	Das steht dann aber nicht in meiner Verantwortung.	But this is not my responsibility.	Confidence in the self-efficacy is linked to the personal commitment. Administrators who are personally invested in and committed to the vision of a more sustainable mobility system are more likely to pursue their vision with greater effort, which increases their efficacy and thus likely leads to an increased self-efficacy. (Keeler et al., in press) The inverse is true.
Theory	Power +	High perceived self-efficacy due to high power.	Participant expresses that she can achieve a more sustainable mobility system because she has the power within the administrational system to do so.	Da muss sich was ändern und umgekehrt sollte man auch den Mut haben, äh, in der Innenstadt weniger Parkplätze für den IV zur Verfügung zu stellen, weil das sind die Steuerungsinstrumente, ne, Durchfahrbarkeit verhindern von	There something has to change, and vice versa, one should have the courage, uh, in the city center to provide less parkin for individual transportation, because that is one steering tool, right, prevent drive-throughs in residential	Confidence in the self-efficacy is linked to the (perceived) power. Administrators believing in that they have the power within the administrational system to pursue a vision and to implement activities are more likely to believe in

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				Wohngebieten und auch von Innenstadtstraßenzügen, und geringere öffentliche Parkplätze, damit da mehr Druck auch aufgebaut wird, denn ohne den geht's nicht.	areas and in the city center, and less public parking, to build more pressure, because it won't work without it.	their self-efficacy. (Keeler et al., in press)
Theory	Power -	Low perceived self-efficacy due to low power.	Participant expresses that she cannot achieve a more sustainable mobility system because she does not have the power within the administrational system to do so.	Also da bin ich irgendwie in der Verwaltung, also wenn man selber was will, ne, bestimmte Sachen durchsetzen, dann, dann, dann scheitert es zum Beispiel am Geld, weil der Rat halt das Geld bereitstellt. So, ne? Und der muss es halt auch bereitstellen, ähm, ne, für'n Radspeicher. Also, äh, wenn, aber wenn die entsprechenden Beschlüsse nicht da sind, oder da was keine Mehrheiten da sind, dann wird halt auch nichts laufen, ne?	Well, there I am in the administration, well, if oneself wants something, right, enforce a specific thing, then, then, then it will fail with money, because the council provides the money. So, right? And it must provide it, uhm, right, for bike parking. So, uh, if, but if the corresponding bills are not being passed, or if there are no majorities, then nothing will happen, right?	Confidence in the self-efficacy is linked to the (perceived) power. Administrators believing in that they have the power within the administrational system to pursue a vision and to implement activities are more likely to believe in their self-efficacy. (Keeler et al., in press) The inverse is true.
Data	Lüneburg +	Lüneburg's context is positive	Participant expresses that Lüneburg has positive prerequisites to achieve a more sustainable mobility system.	Mich macht optimistisch, dass glaube ich die Bevölkerung viel weiter ist, als die Politik es denkt. Ich glaube hier ist viel verbreiteter der Blick der Bevölkerung Richtung Lebensqualität: "Wir wollen mehr erlebbaren Straßenraum, wir wollen wieder mehr Alleen haben	I am optimistic, because I believe the population is much more progressive than politics thinks. I believe here the population looks much more at quality of life. "We want more experienceable space in the streets, we again want more alleys and not	This is part of the contextualized self-efficacy regarding achieving a more sustainable mobility system within a local context. Administrators who perceive their municipality to offer characteristics in society, in the infrastructure, etc.,

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				und nicht diese fürchterlichen Anfahrtsschneisen, die es hier in Lüneburg leider immer noch gibt. Wir wollen mehr urbanes Leben, auch an der Straße. Wir wollen uns wieder unterhalten können. Und mit dem Fahrrad auch mal nebeinander fahren können, oder auch mal Fußwege haben, wo wir schonmal nebeinander laufen können, was ja auch nicht überall Gang und Gäbe ist von den verfügbaren Breiten her." Das unterschätzt glaube ich die Politik noch in hohem Maße, dass dieses Gefühl eigentlich schon verankert ist.	those horrible roads, that unfortunately still exist here in Lüneburg. We also want more urban life, also by the roads. We want to be able to chat. And be able to ride the bike next to one another, or have a pedestrian sideway where one can walk next to one another, which is also not given everywhere looking at the widths." Politics underestimates this to a high degree, I believe, that this feeling is basically already anchored.	that enable a more sustainable mobility system are more likely to perceive a higher self-efficacy as they believe their actions can make use of these beneficial context factors. (Keeler et al., in press)
Data	Lüneburg -	Lüneburg's context is negative	Participant expresses that Lüneburg has negative prerequisites to achieve a more sustainable mobility system.	Ähm. Also ich glaube, ähm, dass wir in Lüneburg hier ein großes Lärmproblem haben. Also nicht nur durch den Autoverkehr, sondern auch durch den Schienenverkehr. Und ähm bin aber nicht so sonderlich zuversichtlich, dass man's lösen kann. So. Ähm.	Um. Well, I believe, uhm, that we here in Lüneburg have a great problem with noise. So not just from car traffic, but also by the train traffic. And, uhm, but I am not particularly confident, that one can solve it. So. Uhm.	This is part of the contextualized self-efficacy regarding achieving a more sustainable mobility system within a local context. Administrators who perceive their municipality to offer characteristics in society, in the infrastructure, etc., that enable a more sustainable mobility system are more likely to

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						perceive a higher self-efficacy as they believe their actions can make use of these beneficial context factors. (Keeler et al., in press) The inverse is true.

References

Jerusalem, M., 2013. Selbstwirksamkeit, in: Sarges, W. (Ed.), Management-Diagnostik, 4. Aufl. ed. Hogrefe, Göttingen, pp. 271–277.

Keeler, L., Beaudoin, F., Wiek, A., Tamm, K., Seebacher, A., Lerner, A., Lang, D.J., Forrest, N., John, B., Kay, B.R., in press. Building Transformative Capacity for Implementing Sustainability Solutions through City-University Partnerships. Ambio.

Schwarzer, R. (Ed.), 1999. Skalen zur Erfassung von Lehrer- und Schülermerkmalen: Dokumentation der psychometrischen Verfahren im Rahmen der wissenschaftlichen Begleitung des Modellversuchs Selbstwirksame Schulen. R. Schwarzer, Berlin, 101 pp.

Wiek, A., Iwaniec, D., 2014. Quality criteria for visions and visioning in sustainability science. Sustain Sci 9 (4), 497–512.