Chapter 4
Conceptualisation and Operationalisation – A Social Geography of Climate Change: Social-Cultural Mentalities, Lifestyle, and Related GHG Emission Effects in Indian Cities

Keywords Lifestyles, Social values · Social structure analysis · 'Tradition' and 'Modernity' · Investive consumption · Social position · Carbon calculator · Ethical consumption · Hedonism · Consumer culture

4.1 Theoretical Framework

In Chap. 2, the most relevant theoretical considerations and conceptual developments in the field of personal-level GHG accounting, general lifestyle research, and environment-related lifestyle research have been presented. Based on these theoretical considerations and implications, a completely new and explorative concept for the analysis of social-culturally based differentials of personal-level GHG emissions is laid out in this following chapter. The building blocks and main components of this concept are depicted in Fig. 4.1. The structure and line of argument in this chapter will follow the main components of the given figure.

4.1.1 Multilevel Perspective and Situative Context of Lifestyle

In this study, individual human behaviour and social practices are seen as embedded within a larger social-economic and social-cultural context. As most other lifestyle conceptualisations, this study does not follow a paradigm of methodological individualism. Rather, lifestyle is understood as a consequence of social mechanisms taking place across multiple levels, from the micro to the macro level of society. Hartmut Lüdtke's (1989, p. 71) account on the structural levels of lifestyle and how these levels interact in dynamic group formation processes (see Sect. 2.2.2.4) is very indicative and contributes to a better understanding of the multilevel interactions from micro to macro level. However, it also is quite a rigid model and the macro level of analysis stops with processes that are still directly associated with social structure and differentiation. Therefore, these processes should not be

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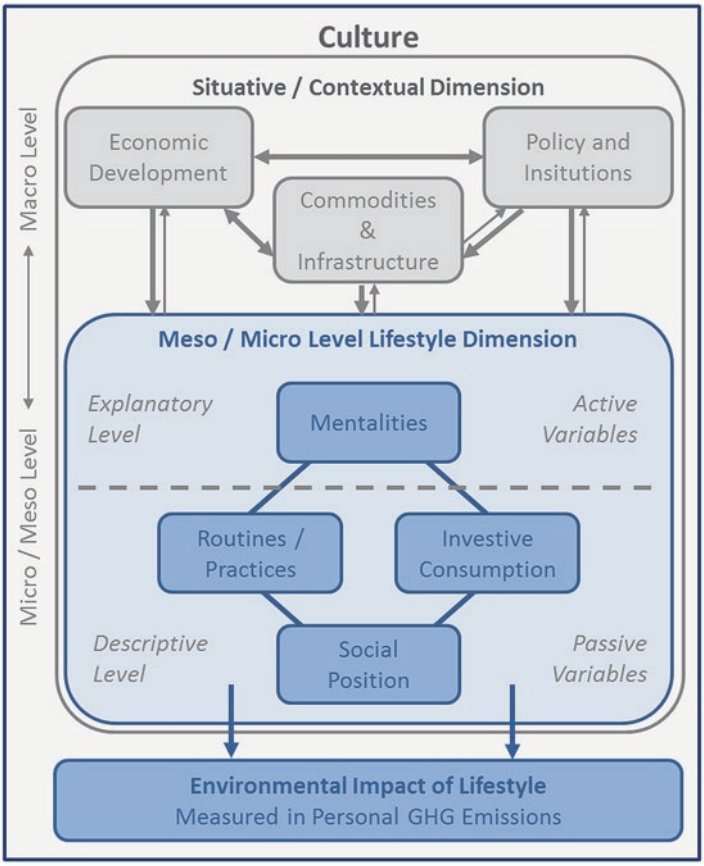

Fig. 4.1 Main components and structure of the concept for the analysis of social-cultural differentials in personal-level GHG emissions

confused conceptually with the broader political-cultural and physical-spatial context. This broader contextualisation is in fact important for an understanding of lifestyle and is rather neglected in most studies. Context includes aspects such as general cultural factors, historical, political, and institutional aspects, level of economic development, and the physical-material dimension – spatial aspects, commodities, and infrastructure. Many studies refer to the embeddedness of lifestyle across levels, as delineated by Lüdtke (1989, p. 71). However, most studies fail to consider the macro level and even more so the contextual and cultural level. This conceptual negligence surprises, as the interpretation of lifestyles can only be based on a deeper understanding of the larger social-cultural embeddedness. This important perspective also includes a consideration of the own role, knowledge, and viewpoint of the researcher(s), e.g. in a post-colonial context (see Sect. 7.2).

In this study, the macro level of social structural differentiation (Fig. 4.1) has largely been incorporated by exploration and qualitative research, mainly during the preliminary phase (see Sects. 4.2.2 and 4.2.3). Albeit difficult to operationalise,

processes of social group and identity formation, social distinction, segregation, exclusion, and related mechanisms become visible or tangible, e.g. in the settlement structure, in residential patterns, in the use of infrastructure, and in public spaces. Often, these manifestations of social segregation are not so obvious. In the case of Indian cities, the phenomenon of spatial fragmentation is commonly found in most parts of a city. For instance, small and often hidden slum pockets can be found in closest vicinity with very posh areas of the city. Often and especially in more posh areas, vacant land is "occupied" by informal dwellers, who, for instance, rely on an informal agreement with the employer or are based on other arrangements (e.g. servants working in an upper-middle-class area such as Banjara Hills). On the other hand, processes of segregation are in fact taking place in Indian cities apart from these often rather micro-level fragmentation processes. These aspects have to be looked at and become more obvious in broader-based residential patterns.

However, an ascription of purely lifestyle-related factors that drive social-spatial segregation has to be taken with much caution. Such lifestyle-based segregation patterns have not been found empirically so far. Coarse differentials based on social-economic position, such as education, occupation, family background, income, wealth, etc. in fact deliver substantial grounds for selective interaction, distinction, and social closure. And these coarse features operate more effectively than lifestyle, especially concerning social-spatial segregation. The freedom to apply selective demand criteria to processes such as deciding for or against a neighbourhood are primarily based on social-economic possibilities. On the ground of this scope of possibilities, a more subtle difference or distinction ("Ein feiner Unterschied") can be made based on, e.g. aesthetic preferences (see Sect. 2.2.2.4).

For the interpretation, explanation, and contextualisation of the statistically derived lifestyle segments, the contextual and situational dimension (Fig. 4.1) is very important. It extends the macro level of lifestyle as delineated by Lüdtke (1989, p. 71). Macro level *and* context are not only important for the deeper understanding and placement of the identified groups and the involved characteristic behavioural and consumption patterns, they are also crucial in terms of conceptualisation, e.g. for the development of the questionnaire.

4.1.1.1 Culture

The viewpoint on the cultural context (Fig. 4.1) provides an often taken-for-granted analytical basis for any social science study. Of course, Mitchell (1995) has reminded cultural geographers that "there is no such thing as culture" and that "the naming and representation of cultures creates partial, yet globalising, truths" (Mitchell 1995, p. 109). Talking about culture inevitably leads to an abstraction of contentious areas into a partial truth. However, in spite of the reified nature of the concept of culture, social science research focusing on any social-cultural aspect requires consideration of broader contextual factors and conditions. Identifying and defining these conditions is highly subjective and remains the author's responsibility.

For the author of this study, it was seen as crucial to take into account historic and political aspects, aspects of language, religion, and ideas about shared norms and

values. Moreover, it was deemed important to take a closer look at gender aspects in the same way as questions on tradition and change. Culture in this study is rather broadly conceptualised; it includes a multiplicity of creative, intellectual, and practical achievements and realisations. It refers to aspects of shared, socially learned knowledge and characteristic patterns of behaviour (Peoples and Bailey 1999, p. 17). The concept comprises "soft" characteristics, such as values, norms, and institutions (understood as rules) as well as material aspects or artefacts such as works of art, tools, buildings, and monuments (cf. Freytag et al. 2016, p. 90). Culture encompasses different lifestyles as well as their contextual components. Lifestyle dynamics as well as associated contextual conditions shape the culture of a group, while cultural changes again re-affect context and lifestyle. The approach taken here highlights how closely culture and lifestyles are intertwined.

Besides the broader concept of culture, there are more specific and more concretely operating contextual aspects operating in the framework of culture. Figure 4.1 highlights these components, namely, policy and institutions, economic development, and infrastructure.

4.1.1.2 Policies and Institutions

Since the early 1990s, India has initiated substantial political and institutional reforms to overcome a major political and economic crisis. The reforms aimed to strengthen market orientation and stimulate private and foreign direct investment through reduction of import tariffs, tax reductions, and market deregulation. Further reforms were implemented over the next two decades, helping to establish a strong and stable economic growth.

The instance of India's liberalisation policies can be seen as a prime example of how political and institutional changes can lead to massive social-economic changes that affect the whole society. Multiple opportunities emerged in terms of new jobs and employment, creative businesses, higher incomes, and interesting future prospects. Steadily, more and more products and services appeared on the market, better and new modes of transport emerged on the scene, and new forms of leisure and recreation arose and became imaginable for many aspiring new consumers. These few lines that attempt to strikingly sum up the effects of political reform in India (for a deeper analysis, see Sect. 3.1.1) are just to convey how important the political and economic boundary conditions are for lifestyle across all levels, from individual to household, via friends and peers up to the overall societal level. And these mentioned reforms only outline economically oriented changes in policies and institutions and that happened on the national level. Also the state and municipality level are important in this regard, as can be exemplified for the case of Hyderabad and, e.g. Bangalore (now Beṅgaḷūru). However, this is only to illustrate the relevance of this contextual component. A more detailed assessment of the different processes and factors will be provided in Sect. 3.4.

4.1.1.3 Economic Development

Moreover, economic development in itself encompasses a multiplicity of much broader implications, especially in the context of an emerging economy like India. The steady economic growth since early 1990s is associated with a whole bundle of dynamic transformation processes that are associated to it. Just to name a few, it affects urbanisation and the dynamics of social mobility and leads to the emergence of a new middle class, new forms of residential patterns, increasing levels of mobility, major changes in consumption and dietary patterns, as well as related impacts on the environment. Along with globalisation, these transformation processes – similarly as in the second half of the twentieth century in Europe – call for new approaches for the analysis of social change and social structure analysis. The most dynamic social-cultural changes concentrate in urban areas and cities in India. Section 3.1 has given an overview of these dynamic processes and has shown how they interact with dynamics of consumption and lifestyle changes.

4.1.1.4 Commodities and Infrastructure: The Symbolic Meanings of Things

There is no doubt about the critical importance of things in our social lives (Shove 2007, p. 4). Things surround us everywhere and things are part of all our daily activities. These material things exist, based on a multiplicity of ascribed symbolic meanings and functions. Analysing consumption involves analysing the functions, character, and meaning of the commodities being consumed as well as the underlying infrastructure that functionally and symbolically serves these consumption patterns.

Many insights in this field come from the sociology of consumption and achievements being made as part of the *cultural turn*. Commodities and most of the material objects that surround us have certain functional purposes and "make sense" to us in various ways. Many of these "things" fulfil de facto basic needs, such as shelter or appliances for cooking. Other things may or may not have direct necessary and crucial purposes to fulfil, and some of their "functions" may have emerged in their own way as being increasingly necessary and taken for granted, such as cosmetics or air-conditioning systems (cf. Shove 2003, p. 3ff). Therefore, the interactions taking place between the individual agent and the material world that surrounds him or her is anything but trivial.

The acquisition of a consumer good may have a variety of ostensible and primary functions, but it may also contribute to an expanded cultural experience for the consumer in terms of "personal self-development and self-expression, and, as with the example of gifts, established and consolidated social relationships" (Warde 2014, p. 281). In consequence, consumer goods and services and other material objects not only carry symbolic meanings and serve as semiotic intermediaries, but they represent valuable "'*resources'* for the construction of individual or collective

identities" (Shove 2007, p. 4 emphasis added). From this perspective, the function of consumption is highlighted and the agent takes an individual choice of consumption.

At this point, it makes sense to draw on discussions mainly originating from the field of practice theory. By borrowing a perspective on notions of context, material configurations, and the view on routines from practice theory, fruitful insights for lifestyle analysis may emerge. According to Schatzki et al. (2001, p. 3), social practices can only be understood by taking into account the role of things and their material configurations. Elisabeth Shove et al. (2012) have taken up this perspective and simplify this approach into a model framework. With this quite new approach to practice theory, they bring forward the three key concepts – meanings, competences, and materials. The material dimension – things and their configurations – is seen as having a very important role, following Latour (2000) that artefacts are "in large part the stuff out of which socialness is made" (Latour 2000, p. 113; cited in Shove et al. 2012, p. 9).

With the practice theory's emphasis on routines, it makes sense to examine the interactive linkages between routines, things, and meanings. Many climate-relevant consumption patterns are related to daily routines, such as mobility and commuting, basic dietary patterns (vegetarian vs. carnivore diet), the use of electric appliances, and cooking. Most of the material objects that surround our everyday life – at home as well as in the city, as consumer goods or sociotechnical infrastructures – in the widest sense serve our consumption practices and daily routine. From this angle, commodities can be defined as all those material objects, things, and services that have become part of any (consumption) practice and thereby carry social meaning. Similarly, sociotechnical systems or infrastructures are made and configured out of sets of material structures and things that only gain social meaning through being employed in social practices. In fact, existence, character, and utilisation of infrastructure are closely related to governance, policies, and institutions and can be seen as a factor for and an outcome of economic development. Infrastructure in this specific context includes all those facilities and arrangements, services, and amenities – social and physical – that are privately or publicly established for any group of users or beneficiaries. Infrastructure can be streets, railways, shopping centres, parks, or public toilets in the same way as hospitals, universities, schools, or residential welfare associations (RWA) and so on. Sociotechnical infrastructure in this sense has to be understood as being systematically made of a plethora of components and things. In this view, a "flyover" as well as a gated community can be understood as sociotechnical infrastructural systems, i.e. systems made and configured out of material objects and things.

Lifestyles emerge and operate in selective correspondence with and in selective distancing from the elements and features present in the respective social field or action space. This is why these material objects and the social and physical infrastructure have to be taken into account. This includes getting hold of the multiplicity of symbolic meanings and functions of these things and their configurations.

Altogether, these components, elements, and features can be conceptualised as forming a stage and containing a whole bundle of props or requisites, all of which

carry a multiplicity of socially constructed and ascribed social-cultural meanings. Differing stocks of capital resources of all involved actors, the market and its development of prices and costs (monetary and transaction), and the resulting power relations cater for differing access rights over the use of requisites as well as specific positions on stage.

The image or abstract concept of a stage and its related requisites allows for an easier explanation of the elements, meanings, functions, and processes at work. The abstract view on having access to infrastructure and other material objects that surround us analytically and purposefully reduces the complexity of class and social-position-related mechanisms to a simple dimension of having access to the material world and being positioned within the material culture of an (urban) society. This level of access to the material world and the character of being positioned within the social space describe the class-related differentials and the resulting power relations. This class-specific positioning is based on a coarse differentiation and confines and limits the action space for each actor. The fine and subtle differentiation ("Feine Unterschiede") can only take place within the confines of the coarsely defined action space.

To stay with the analytically intended simplification and image of the theatre, the play itself allows the actors to refer to and relate themselves with other players and with the material world. Based on their value orientations, preferences, and competences, they observe, perceive, and evaluate the continuously changing stage, its requisites, and the performance of other actors situated on stage. From his or her specific angle, every actor perceives, understands, and interprets the altering character of the material world and the social practices on stage differently. He or she "receives" the variously ascribed meanings of things and practices in correspondence with his value orientation and preferences and based on his social position. This specific reception always happens in reference to others and can be understood as a process of integration and closure, taking place on the meso level of lifestyle.

By taking into account material objects as well as socio-physical systems and infrastructure, symbolic and functional elements and aspects of the urban environment are more directly considered and integrated. Such an approach allows consideration of the relational-spatial aspects of the urban context and broadens the perspective on consumption and lifestyle. On the one hand, it includes physical-spatial features signifying routine spaces, such as the neighbourhood or parks as well as places where a lot of consumption occurs (e.g. supermarkets, corner shops, or takeaways) (Gregory 2009, p. 109, "consumption"). On the other hand, it takes into account more seductive spaces such as leisure parks, cinemas, and shopping malls, where much of the leisured consumption takes place and where mechanisms of spatial social exclusion quite directly become manifest through, e.g. surveillance (Gregory 2009, p. 109, "consumption").

The material configuration of urban areas has substantial impacts on the way of life of the people living in these areas. Not only commodities, such as cars, air-conditioners, mobile phones, and so on, but also places and infrastructure have an exclusive and thereby distinctive character, i.e. access to these material configurations is restricted based on a variety of criteria, formal or informal, subtle or definite.

For instance, gated communities commonly curtail access into the areas quite definitively and formally institutionalised. By contrast, shopping malls, supermarkets, leisure parks, cafes, restaurants, etc. work much more subtle with a diverse set of inclusionary and exclusionary means of framing the public and private spaces of the city.

Malls offer a good example of how commercialised public spaces successfully combine functions of shopping and retail with entertainment, gastronomy, and other "lifestyle-enhancing activities" (Allen 2006, p. 443). This integration of a whole set of social functions into well-designed and subtly well-controlled public spaces are "now more often designed to enable social interaction of a particular kind and to facilitate certain types of reaction to the aesthetic and recreational objects around them" (Allen 2006, p. 443). At the same time, these commercialised public spaces play out a modest form of power that "works through the suggestive pull of the design and layout, offering choices around movement and patterns of interaction" (Allen 2006, p. 445). Interestingly, for many urban dwellers, these commercialised places supersede formerly "real" public places in their functions for social interactions. In this way, an illusionary publicness is staged in a fully privatised space where urban amenities are commercialised and subtle mechanisms function as informal barriers for "those 'who don't belong' or appear 'out of place'" (Allen 2006, p. 442).

Many of these newly evolved commercialised spaces of urban "mall-style living" (Allen 2006, p. 442) and the newly available commodities or "requisites" tend to stand in critical opposition to the remaining traditional, prereform-era features of the urban economy and way of life. In terms of design, ambiance, and lifestyle, shopping in a mall or supermarket tends to stimulate characteristic effects, and it tends to offer a broader set of social-cultural functions as compared to the features related to shopping from a mobile street vendor or at a rather "traditional" corner shop (Kirana). Similarly, different modes of transport or the features related to leisure activities and holidays play out to be quite relevant in terms of distinction and social closure.

Surely, dichotomising such realms bears the risk of oversimplification and remains subjective. However, based on the data, the author has attempted to differentiate between the "new" and the "traditional" material world through principal component analysis (PCA). By means of participant observation and semi-structured qualitative interviews, material aspects of lifestyle and the role of the physical environment have been explored, and building on these results, the author has included these aspects in the quantitative survey. For the concrete operationalisation of lifestyle, the micro and meso levels are directly considered for the analysis. The study thereby attempts to get hold of processes of social categorisations, distinction, and identity formation, as well as material and behavioural aspects that serve as a holistic set of markers for social differentiation (cf. Lüdtke 1989:69). Analytically, these aspects and processes are differentiated according to the dimensions mentalities, conduct of life, and social position.

4.1.2 The Explanatory Level: Mentalities

Mentalities, which rest on subjective determinants such as values, norms, attitudes, and preferences, build the explanatory level of this analysis. An analytical separation of the three constitutive dimensions of lifestyle is not to say that these components do not strongly interdepend. Rather the opposite is the case, as mentalities may be strongly influenced by, e.g. the education and the educational level of parents, moreover by socialisation, caste, employment, etc. The same is true for routines and behaviour, which may strongly depend on attitudes and preferences, i.e. mentalities, but also depend on the social-economic situation, such as income, age, and/or gender. Based on the findings from earlier operationalisation in lifestyle research, it is not suggested to combine different components of lifestyle in the segmentation process. Such an approach thwarts the possibility of getting hold of relational aspects between the analytical elements (see Sect. 2.2.2.4).

Therefore, based on theoretical considerations about the objectives of this study, the author has decided the segmentation or clustering to be based on mentalities. In this study, mentality is operationalised based on a set of variables that measure general attitudes and preferences of respondents. The selected attitudes and preferences touch quite broad and more general issues of everyday life, and they deliberately do not focus on environmental aspects. This set of manifest variables then undergoes PCA in order to inductively reduce the number of variables on mentality into a few dimensions, represented in the form of latent variables. These latent variables that are meant to measure respondents' value orientation or mentality build the basis for the cluster analysis, which means that these variables are handled as an *active* set of variables (see Sect. 4.2.5).

Mentalities can be termed as the "soft" characteristics of lifestyle, i.e. values and general attitudes. Schwartz (1994, p. 21) defines values as "desirable trans-situational goals, varying in importance, that serve as guiding principles in the life of a person or other social entity". (Schwartz 1994, p. 21). Values differ from the notion of attitudes. Values are more abstract and, in fact, attitudes derive from values as life goals as they refer to an "evaluation of a specific object, quality, or behaviour as good or bad, positive or negative"(Leiserowitz et al. 2006, p. 414), i.e. values frame the attitudes of a person.

Surveying human values involves a range of challenges, as one cannot measure values directly. Measuring values requires a set of tangible attitudinal questions that are derived from an assumed targeted value. The set of values and attitudes, however, needs to challenge respondents with statements that touch upon characteristic friction lines and conflicting matters, so that the issues being raised are not evaluated on the basis of largely universally shared general cultural value orientations. Instead, as a matter of fact, the battery items need to deliver enough aspects for a social-cultural differentiation. To figure out enough of these aspects, the author first conducted a qualitative study: he talked to a diverse set of people, e.g. about the city in which they live, about changes they experience in their living environment, about their general expectations, and about their life goals and talked about and encouraged

them to evaluate different actions, policies, people, and events (see Sect. 4.2.3). With this data and through participant observation, the author learned about the context, inner logic, motives, and goals of culturally and socially specific attitudes, conflicting lines, and potential cleavages. This study informed and facilitated the exploration and evaluation of social value orientation theories, such as the Schwartz value theory (Schwartz 1994), Rokeach's theory on the nature of human values (Rokeach 1973), or others such as the Kluckhohn-Strodtbeck framework (Kluckhohn and Strodtbeck 1961) or Inglehart's theory of value change in Western societies (Inglehart 1990).

Crucial for developing the survey tool was to keep the questions as simple as possible in order to avoid misinterpretations, both in the translation process of the questionnaire and in order not to overcharge the respondent with complicated questions and phrases. Especially attitudinal questions from known value surveys tend to often contain abstract concepts and complicated issues. In response to the problem of too-abstract question batteries, Schwartz et al. (2001) have developed a tool for measuring ten value constructs of their theory with a new and less abstract tool, the Portrait Values Questionnaire (PVQ). In this theory, the authors identify "a comprehensive set of 10 different types of values recognised across cultures", and they also specify "the conflicts and congruities among these values" (Schwartz et al. 2001, p. 519).

The PVQ consists of short and simple verbal portraits of different people, with each portrait describing "a person's goals, aspirations, or wishes that point implicitly to the importance of a value" (Schwartz et al. 2001, p. 523). For example, "Tradition is important to her. She tries to follow the customs handed down by her family" (Annex I) describes a person for whom traditional values are important, i.e. according to the Schwartz value theory, "respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self" (Schwartz et al. 2001, p. 521). To give another example, "She strongly believes that people should care for nature. Looking after the environment is important to her" describes a person who appreciates universalism, i.e. according to the theory, "understanding, appreciation, tolerance and protection for the welfare of all people and for nature" (Schwartz et al. 2001, p. 521).

The attitudinal items are measured on a six-point Likert scale, on which respondents are asked to rate "How much like you is this person?" They can choose from the following ratings: "very much like me", "like me", "somewhat like me", "a little like me", "not like me", and "not like me at all" (Annex I). Respondents' values are inferred from self-reported rating on their similarity "to people that are implicitly described in terms of particular values" (Schwartz et al. 2001, p. 523). Due to the long-term and international experience in its application and due to its simplicity, conciseness, and comprehensiveness, PVQ was assumed to be highly suitable and effective for a segmentation based on social value orientation.[1]

[1] In combination with other items, the explanatory value of many of the PVQ items in PCA was quite weak compared to other items (see below). With communality values often below 0.4, the

Complementary to the PVQ battery, a more culturally specific set of attitudinal questions was constructed in order to cover a measurement of attitudes towards changes in consumption and processes of social transformation. These aspects are particularly important with respect to the framing of lifestyle and sustainability. The Likert scale for these items was similarly created in six levels: "strongly agree", "agree", "somewhat agree", "somewhat disagree", "disagree", and "strongly disagree". Altogether 53 questionnaire items have been included in the final questionnaire. This quite large number of items provided a maximum of flexibility in respect to selecting a suitable set of items, broad enough to touch a variety of differentiating issues. After a number of explorative PCA trials, a set of 21 items have found their way into the final analysis.[2]

With the author's focus on consumption as a determinant of personal GHG emissions, many of the selected items draw on issues related to consumption with assumed targeted value orientations that tend to involve hedonism, materialism, enthusiasm towards consumerism, and stimulation. In presumed opposition to these hedonistic attitudes, stand items that describe orientations based on frugality and thriftiness. These Gandhian ideals of simplicity stand very close to attitudes that are rather driven or forced out of poverty and termed here "culture of necessity".

Moreover, the author was particularly interested in how these consumption-related attitudes correspond with or oppose issues touching upon the fields of tension between change and continuity and between globalisation and Indianness (cf. Brosius 2010, pp. 5, 12). While "modernity" is conceptualised by largely drawing on recent ethnographic literature on the (urban) middle classes in India (Brosius 2010; Donner 2008; Fernandes 2006, 2009; Lange et al. 2009; Säävälä 2010; Upadhya 2009; van Wessel 2001, 2004; Varma 1998), it is the concept of tradition that builds – in addition to the mentioned literature – on a Hindu mythological background. Most of the aspects, however, have also been raised as part of the qualitative study. Moreover, the author was interested to include attitudes that indicate an orientation towards *self-transcendence*, which is highly relevant in the context of consumption, related aspects of sustainability, and environmental and social engagement. To address this field and measure the value orientation of benevolence and universalism, some of these more generally oriented items from the PVQ have been supplemented by self-conceptualised items on social ecology, conscious consumption, and sense of community. Figure 4.2 depicts all targeted value orientations, and based on their relative positions, it roughly indicates how the concepts relate to each other in terms of content. This above-given short overview of the basic components of value orientations used in the survey will be further detailed in the following sections.

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proportion of the item's variance explained by quite some of the explorative factor models was relatively low. In consequence, many of the PVQ items were left out from the final analysis.

[2] Annex provides an overview of all surveyed items, sources, assumed target value, and reasons for or against inclusion into the analysis.

Fig. 4.2 Concept cloud of all targeted value orientations included in the survey. The sizes of the words *coarsely* point to the number of items that aim to measure the respective targeted value. The relative positions of the concepts *roughly* indicate proximity or distance in respect to content

4.1.2.1 Attitudes Towards Consumption

As delineated in Sect. 3.1, political reforms based on New Economic Policy (NEP) as well as the closely related transformation processes of urbanisation and globalisation have created a context of rapid social-cultural change. Based on other research, especially on the new middle classes and the role of consumption, the author was aware of the lines of conflict between tradition and change that in particular is manifested in the realm of consumption. To measure these impacts and to get hold of respondents' attitudes and values towards a "modern" materialist culture, in which shopping, buying, and consuming are perceived as pleasure, enjoyment, and entertainment, a large set of items were created in order to cover the quite different aspects relevant in this field. Apart from the more direct and explicit hedonist pursuits of consumption, the notion of exclusiveness of shops, locales, and products bears more subtle and in some cases subconscious motives, related to emulation, identity management, self-realisation, and self-expression (cf. van Wessel 2004, p. 99). Also aspects of a virtue of simplicity and thrift, the role of financially forced frugality and last but not least aspects of a social-ecologically motivated consciousness of consumption have been included in the analysis (Table 4.1).

Hedonism and Materialism vs. Simplicity and Thrift

India exhibits a unique case for the analysis of consumption orientation, with its post-colonial accounts of the Gandhian ideal of simplicity, the Nehruvian era of socialism, and the post-socialist phase of economic reform and liberalisation in the early 1990s. With the latter period of economic reforms and rapid social transformations, the notion of consumption has changed substantially with regard to its meaning and its implications for other social issues. And indeed, it can be clearly stated that the occurrence of a materialist consumer culture in India is a rather new phenomenon.

Generally, and in the Indian context in particular, present-day consumer culture has been described as a "condition in which people seek self-realisation or self-expression through goods rather than through spiritual or social pursuits" (van

Table 4.1 Overview of questionnaire items measuring targeted values towards consumption

Source	Item	Targeted value orientation
OC	It sometimes bothers me quite a lot that I can't afford to buy all the things other people have	Hedonism/ materialism
OC	I quite frequently shop in more expensive and exclusive stores	
OC	I like to buy things just for the fun of it	
OC	Going to shopping malls is one of the activities that I really like, even if I don't buy anything	
PVQ	Seeks for chances to have fun; do things that give her/him pleasure	
PVQ	Wants to enjoy life; having a good time	
OC	Often buying new things, such as clothes, electronics, etc., is very important for me in order to take part in social life of my friends and colleagues	
OC	I dislike a luxury brand when it is used by everyone	
OC	Things have changed a lot. I can now afford almost everything I wish to have and I go for it	
OC	The place where you live almost says everything about a person	
OC	Consumption as such is given too much importance in our society and doesn't make you happier in the end	Simplicity and thrift
OC	It is not good to accumulate wealth and material goods for the satisfaction of personal needs. It is enough to fulfil the needs of one's family	
OC	Seeking truth, harmony, and unity should be given priority over achieving wealth and prosperity	
OC	I believe that everybody should follow the virtues of austerity and modesty. This would make the world a much better place	

OC own conception, *PVQ* taken from Portrait Value Survey based on Schwartz et al. (2001)

Wessel 2004, p. 95). And indeed, with economic liberalisation, availability of consumer goods increased substantially, and with rapid economic development, income levels rose at an unprecedented pace. At the same time, all kinds of foreign products poured onto the so far protected Indian market (cf. Mathur 2010, p. 213), and the Indian middle class became a focus of broad media attention as a great new market for consumer goods (van Wessel 2004, p. 94). Moreover, the ubiquitously visible and sometimes exaggerated political and medial construction (Fernandes 2009, p. 219f; Mathur 2010, p. 212f) of this social-cultural transformation created and still creates a hopeful and aspirational outlook into the future (Aufbruchstimmung).

However, at the same time, this political and social-cultural context nurtures serious doubts and resistance against rapid social-cultural change especially among members of the middle classes, leading to religious revivalism (Section below) and an ambivalence or even denial of mass consumption and its legitimacy (van Wessel 2004, p. 95). Margit van Wessel, in her ethnographic study on the urban middle classes in Baroda, a provincial town in the Indian state of Gujarat, has remarkably

shown these moral issues on modern consumption and the related ambivalence among members of the urban middle classes (van Wessel 2004, p. 95).

According to her research, this ambivalence becomes manifest between the observed and the self-experienced practices of modern consumption. Also Säävälä (2010, p. 122ff) with her research on middle-class moralities in Hyderabad illustrates this critical position and the moral attitude towards spending, largely among lower middle-class people in Hyderabad: in the context of a rapidly transforming material and media world, many respondents in her interviews "tended to create an image of the average middle-class person as greedy and excessive, while defending themselves against the same charge" (Säävälä 2010, p. 122). The informative examples of an ethically framed "self-presentation as frugal rather than extravagantly consumeristic" (Säävälä 2010, p. 122) underline the subtle linkages between frugality as a necessity due to financial constraints and a similar stance motivated out of virtue and moral reasons (see further below in this subchapter). These linkages are crucial to consider here, as they point to the importance of morality with respect to money and spending.

Apparently there is a moral ambivalence between the "consumerist urge" (Säävälä 2010, p. 121) being expressed by a "perpetual need to spend money" on the one hand and the construction of money as "an anti-social, destructive and morally dangerous element" (Säävälä 2010:124) on the other hand. While most of the mass and advertising media celebrate consumerism quite unchallenged, there seems to be a common notion among the middle classes which sets the frame more negatively by regarding wealthier and more educated urban people as having lost their moral integrity and being blinded by greed (Säävälä 2010, p. 123). Säävälä (2010, p. 123) points to the remarkable fact "that the idealising image of rural people's moral value" is so evident even "in the discourse of people who do not themselves have direct roots in villages" (2010, p. 123).

Also highly relevant in this realm is the prevalent idealism of simplicity and thrift (Mathur 2010, p. 226; van Wessel 2004, p. 95). While the above-delineated consumer culture orientation represents a rather new phenomenon in the Indian context, it is the latter cultural theme of austerity and simplicity which is largely based in Hindu mythological traits (see subchapter below) and revisited by Mahatma Gandhi. Mahatma Gandhi is "often admired as the sublime practitioner of the ideal of simplicity" (van Wessel 2004, p. 99), and his far-reaching influence cannot be overestimated in the Indian context, both culturally and also politically. However, even if the ideal seems to widely persist today also among the new Indian middle classes, the actual practices exhibit a different approach to consumption. Culturally, money and wealth do play an important role with regard to identity and self-expression. According to van Wessel, a practical realisation of simplicity and austerity is even "seen as standing in the way of survival in the dirty world" (van Wessel 2004, p. 100).

These two contradictory strands and the resulting ambivalence have cautioned the author to select the items that measure attitudes towards consumption carefully and also to get hold of the internal conflicts and ambivalences. Therefore, items have been created addressing hedonism and consumer culture orientation rather

indirectly, being aware of the fact that respondents tend to downplay their own consumption behaviour. Säävälä in her book on middle-class moralities (2010, p. 122) refers to this tendency of her interviewees to create an image of the average middle-class person as greedy and excessive (Säävälä 2010, p. 122). Similarly, in quite a number of the qualitative semi-structured interviews conducted by the author, respondents rather discuss and expound emulative consumption behaviour of others, while professing to be immune against the enticements of modern consumption themselves. For instance, in the following quotation, a young engineering professional well depicts the impacts of advertising and fashion discourses on the young generation. He makes clear at the same time that he is not being affected himself:

> *When the changes started happening [refers to economic liberalisation], I have already passed my school days and got into professional career. So, I was matured to handle the change. Now, the people who are in the 15s and 16s, they start looking at all these gazettes, which are coming up, so the impact of all this is getting more on them. They can't handle it well and they become addicted, virtually killing their friend to get these things from the gazette; these are the negative aspects of rapid change. (Interview No. 022_2010_5_6: 10)*

Another quote from a quite well-off bank employee thematises the emerging practice of buying branded and more expensive fashion items. Similarly, he refers to IT professionals and interestingly members of the middle class who – according to him – seem to have fallen under the spell of large foreign companies and their expensive products. While he himself has been immune to this cultural change, he observes, understands, and supports his son's positive attitude towards the expensive exclusiveness of his preferred products:

> *Many people, those who are in software industry and middle class people, they prefer only branded clothes, and branded shoes. Many, I mean, these software engineers and all, they prefer branded items, and that is why there are branded shops, which are also very crowded. Of course, we purchase from outside only like local Bata or Action Shoes. But my son, he wears only Reebok or Adidas, quite opposite. […] They are very light and comfortable. And he says they are durable also. To some extent, he is correct also. […] To some extent, […] comfort wise, they are good, when compared to some other brands and they are very light. (Interview No. 018_2010_5_2: 11)*

In order to avoid or reduce any social expectancy bias, which may evolve from this ambivalence towards consumption, the items on consumption have been selected very cautiously. The author has attempted to frame hedonism and the theme of conspicuous consumption under the notion of entertainment, enjoyment, and pleasure as basic feature of shopping and modern consumption.

The items have been formulated to draw on preferences instead of directly measuring the underlying values and motives in order to minimise the role of moral conflicts. One crucially important feature of "modern" consumption is associated with the combined and interconnected realms of shopping and consumption on the one hand and leisure and entertainment on the other hand. Commercialised semi-public spaces such as malls and leisure parks are a quite recent phenomenon in India, having emerged with the political economic reforms of the early 1990s. Apart from the simple act of shopping, these commercialised spaces have a lot to offer concerning individual requirements of enculturation, identity management, and

conspicuous consumption. According to Mathur (2010, p. 213) "particular manners, ways of living and conspicuous consumption of goods which are simply not available to all classes of people serve as a means of gaining social status and repute. Conspicuous consumption, in a nutshell, becomes a status symbol in itself".

Subtly exclusive (see Sect. 5.2.3.4) and culturally novel, these places can be seen as mirrored images of the modern Indian consumer culture. The reason is that malls are able to holistically incorporate and exhibit nearly everything that is related to the images of modern lifestyle and consumption. Malls not only function as localities for buying things such as apparel, accessories, gifts, electronic goods, and lifestyle commodities, but they also offer a whole variety of options for recreation, wellness, entertainment, and leisure in form of beauty parlours, coffee shops, pubs, restaurants, and even amphitheatres and cinema halls (Mathur 2010, p. 221). Moreover, it is a typical feature of multiplex shopping malls in India that they are very well kept and extraordinarily clean. They are usually also observed and controlled by security staff and the entrances mostly have security checks.

In short, malls are systematically designed spaces with a very characteristic infrastructure created for customer fulfilment. Very similar to gated communities, malls are privately run, self-contained, secured, and somewhat exclusive spaces. They seemingly work under an invisible force that takes control of nearly everything, starting with air, temperature, and odours via sounds, colours, and light effects to the directions, movements, and even moods of their visitors. These meticulously organised super-worlds have become a physical, social, and cultural opposition to the existing outside world, an outside world that tends to be perceived in contrast as undisciplined, polluted, hot, noisy, crowded, and unsafe. Just as the material infrastructure is expected to function properly, people or visitors of malls are socially expected to function adequately as knowledgeable and well-informed participants of a newly emerging consumer class.

Gaining a sense of recognition as a member of this class therefore entails not only the financial resources but also adequate knowledge and skills to be able to participate. Nita Mathur (2010) in this context refers to the notion of conspicuous consumption. According to her research, it involves a "competition for status based on an individual's socio-economic competence" (Mathur 2010, p. 226). Malls provide free access to this "source of knowledge", and at the same time, they become testing grounds (cf. Brosius 2010, p. 2) to practise and experiment with the newly acquired skills. It is not surprising, therefore, that Christiane Brosius (2010, p. 30) associates this rather new practice of mall shopping in urban India with the concept of flânerie:

> *A flâneur is a cultured person, a pleasure- and event-seeking expert of emerging capitalism and urbanism. […] For her/him, viewing and buying came to be consumption as a stage play of pleasure; the performance of floating through urban arenas of capitalism is more important than the actual act of buying.*

Indeed, as Brosius argues, flânerie requires an adequate setting or a stage to perform on, such as shopping malls, tourist and ritual sites, or leisure parks (Brosius 2010,

p. 30). These spaces function in different ways as a learning ground to acquire elementary knowledge on new forms of consumption and lifestyle.

This learning process is part of a much broader process of *enculturation*. This term is not meant to exaggerate. It is based on the assumption of rapid economic growth combined with an unprecedented prevalence of images that are created and exhibited in order to convey new forms of culture and living. Arjun Appadurai, in his path-breaking work on globalisation (1996, p. 53), stresses that "there is a peculiar new force to the imagination in social life today. More persons in more parts of the world consider a wider set of possible lives than they ever did before". In line with advertising and mass media, the above-mentioned arenas of consumption and especially shopping malls continuously create and exhibit a multiplicity of "fashionable" and ephemeral images that are made to be received, consumed, processed, and contextualised.

In addition to the theme of "seeing and being seen" (Brosius 2010, p. 23), there is another important dimension to the newly emerging consumer culture in urban India, namely, the notion of *Erlebnis*. Schulze claims this aspect to be foundational for modern society. It can be at best identified as an "eventful sensuous, deep and immediate experience" (Brosius 2010, p. 23). As shown above, shopping malls are testing grounds for modern lifestyle, but they may also work as stages, on which satisfaction and happiness become visible and one's own "good taste" and a "beautiful life" (Schulze 1992, p. 34ff) can be exhibited to the world (cf. Brosius 2010, p. 22).

Hedonist and conspicuous consumption plays a crucial role in managing one's own identity with regard to some members of the middle class. Taking part and being recognised in practices of modern consumption conveys a sense of belonging to the middle class or even "world class" (Brosius 2010, p. 22). The hedonistic dimension to it can be termed as a "feel-good factor" (Brosius 2010, p. 21), which translates into the behavioural aspects of everyday leisure activities. In this way, pleasure is generated through commercially reproduced recreational activities (Brosius 2010, p. 179). As also shown, however, this culturally rather new phenomenon does not come without due ambivalences and moral conflicts. The resulting factor solution of the PCA has interestingly merged variables delineating the paradigm of morally driven "frugality and thrift" with variables representing the paradigm "culture of necessity" (see below).

Culture of Necessity

Very important for the understanding of urban consumption patterns in a social-cultural context of prevalent poverty is the aspect of financially driven or forced frugality. Under conditions of financial constraints or even severe poverty, people have a very different perspective on consumption. For those who are poor, thrift denotes a determining standard of living and a basic attitude without any alternative:

> *The thing is, however hard I try, I only earn this much; but if I try to cross my limits it would mean a loss for us. Why should we make a loss for us? We should be satisfied with whatever we have. If for example we eat only how much we require it is ok, but if we try to overfill our stomachs, then it is a problem. Why should we try to show off? If I have more desire it is a loss for us. If you ask anybody in Hyderabad they say the same thing. (Interview No. 009_2010_3_23: 2)*

This statement drawn from an interview given by an illiterate middle-aged woman who lives in an informal settlement in Bagh Lingampally is quite illustrative for the assumed paradigm of frugality. In this analogy of food intake symbolising general consumption, the financial situation forbids a person to consume more than their own stomach can take. Fulfilment of desires that are beyond the very basic needs level is perceived to be harmful and seen as loss. And subtly, there is an implicit moral component also that says one should be happy with whatever one has. This financially driven *and* morally framed position on frugality and thrift draws on the Gandhian ideals of simplicity and asceticism (cf. van Wessel 2004, pp. 99ff; Mathur 2010, p. 226). Besides this normative connotation, the quotation implies a somewhat fatalistic view, which corresponds with the logic of religious traditionalism, as laid out in the following section. It conveys an attitude of unconditional satisfaction with the God-given social position. The following interview sequence indicates a similar strand, but with the difference of the respondent having achieved a slightly higher social status:

> *We are poor, definitely, but at the same time we have a little, we can afford. I am not able to explain. Sometimes it is okay, sometimes it is hard. It is like what only we work we will eat. Otherwise there is nothing to eat. It is okay, I have a number of responsibilities and my sisters go to school; like there are lot of bills and other things I have to take care, power bills, and water bills. My father has no income as he is blind. (Interview No. 010_2010_3_24: 4)*

This young man, who works as a car driver and lives in an informal settlement in Old Safilguda, evaluates his and his family's social situation quite positively and humbly. With his job, he himself can feed his family and take care of his sisters' education. Moreover, he was able to take a loan for getting his own house built for his marriage. His humble assessment is based on the assumption that hard work, thrift, modesty, and foresightful investments into basic future projects (education of sisters, having an own house) will most probably lead to an eventual success story for the whole family (see also cluster 1 in Sect. 6.4.1). However, his hand-to-mouth metaphor ("what we work we will eat") does not match his actual situation of having consolidated a quite reasonable status quo and a rather optimistic outlook for his whole family. Table 4.2 exhibits the items created for the measurement of the targeted value paradigm of "culture of necessity".

Social-Ecologically Motivated Consciousness Towards Consumption

Largely drawn from research experience from Europe and Germany (Peters et al. 2013, p. 230ff), the author has included a couple of questionnaire items that address consumption from a perspective of social-ecologically motivated consciousness and

Table 4.2 Overview of questionnaire items measuring the targeted value paradigm of "culture of necessity"

Source	Item	Targeted value orientation
OC	It doesn't matter how much I earn; when I have a choice between two equal products, I usually go for the lowest priced product	Culture of necessity
OC	My life situation leaves no other option than carefully watching out how much I spent	Culture of necessity
OC	I carefully watch out how much I spend in order to save my money for harder times	Culture of necessity
OC	Whatever I earn goes into maintenance of basic needs	Culture of necessity

OC own conception, *PVQ* taken from Portrait Value Survey based on Schwartz et al. (2001)

responsibility. Conscious and responsible consumption involves an attitude that builds on reason and motivation for individual agency. It comes with a positive cognition about the meaningfulness and efficacy of one's own actions. This is especially the case with regard to a consciousness towards sustainable consumption. A social-ecologically conscious consumer perceives that he or she has an impact on production processes and the market. She or he is convinced of the relevance of individual consumption decisions with regard to the eventual effect on the market. Such a motivation is driven by the assumption that through imitation by others, and the cumulative influence on the demand for sustainable products, a general gradual change in awareness is effectuated. Hence, ethical consumption usually involves a great level of self-efficacy, which is an attitude that assumes one's own actions to be powerful enough to convey a message or even change something.

The earliest accounts of politically motivated boycott of consumer goods in India go back to the "Swadeshi" (indigenous goods) movement. First in Bengal in the early twentieth century and later driven forward by Mahatma Gandhi, the Swadeshi movement aimed to bring forward the Indian economy and make it self-sufficient, particularly against the British colonial textile industry. With the aim of "Swaraj" (home rule), Gandhi promoted the exclusive consumption of hand-spun, hand-woven cloth called "Khadi" (Trivedi 2003, p. 11; cf. also Vedwan 2007, p. 675).

Another more recent account of environment-related consumer concern has emerged over the issue of pesticides being found in products from Coca-Cola and PepsiCo. A report issued in 2003 by the Delhi-based environmental NGO Centre for Science and Environment (CSE) indicated the presence of pesticides in a number of popular beverages greatly exceeding European standards (Vedwan 2007, p. 659). The notion of an often taken-for-granted high quality standard of a well-known "Western" product was used to convey that the nearly unregulated pesticide industry in India has very serious environmental and public health impacts reaching as far as into a product like this (Vedwan 2007, p. 660). In reaction, a broad-based moral boycott of Coca-Cola and PepsiCo products began, with several states issuing a ban on these products and a drive to publicly destroy Coca-Cola and Pepsi bottles, initiated by several cultural nationalist organisations. Moreover, alternative and mainly "indigenous" products such as buttermilk and homemade lemonade

gained importance, with some of these soft drinks being made of the same contaminated water as that used by Coca-Cola and PepsiCo (Vedwan 2007, p. 674).

Vedwan (2007, p. 663) contextualises this movement in a new strand of environmentalism in India, which has emerged since the onset of political reforms and economic liberalisation as part of the NEP. Ideologically, this new environmentalism appears to be based on the needs and perceptions of the urban middle classes against the background of deepening environmental problems, especially in urban areas due to rapid urbanisation, changing lifestyles, and industrialisation (Vedwan 2007, p. 660). It is contrary to the historical pattern of environmental movements in India, which essentially focused on the livelihood struggles of the poor and marginalised and the "issue of equity in relation to access and use of natural resources" (Swain 2014, p. 210). Much of this assessment draws on colonial and post-colonial accounts of largely rural-based material and discursive conflicts that have also struck other broader social and political struggles (cf. Mawdsley 2004, p. 79). The new environmentalism in India is rather urban-based and globally oriented "in tracing the origins of and the possible solutions to the environmental problems", aiming at issues such as climate change and related discourses on global climate equity (see Sect. 3.3) (2007, p. 663).

The case of pesticides being found in beverages well illustrates the new political role of the Indian middle class in a context of rapid change. Vedwan (2007, p. 660) argues that "in a postcolonial context characterised by rapid and uneven economic change, largely unrestrained by environmental and social safeguards, the question of how to reduce the often-destructive effects of such runaway growth, in the face of state apathy and even complicity, has never been more important". And the middle class is increasingly successful in setting the agenda, especially in the urban context. Middle-class environmental organisations have grown in number and impact, and in case of being unable to mobilise and sustain broader coalitions, they increasingly resort to involving the courts and forcing the state into action (Vedwan 2007, p. 664).

This newly gained middle-class identity and agency suits well to the notion of ethical consumption and the "participatory rhetoric" associated with it (Vedwan 2007, p. 675). A more general tendency towards taking into account societal and ecological consequences in purchasing decisions has been found among segments of the urban consumers (see also Singh 2009). This has been addressed by the first two items listed within the category of ethical consumption (Table 4.3). In order to also cover the trend of patriotic consumption, the author has included two questionnaire items that address aspects of product origin. *Make in India* is a campaign quite recently initiated by the Narendra Modi government in 2014, aiming to promote brands and products produced in India (see also Sect. 3.1; Table 4.3).

The above-outlined critical dimensions of consumption have indicated at the complexity, multiple dimensions, and ambivalences of modern consumption in urban India. This study attempts to address these dimensions quite comprehensively in order to cover a broad spectrum of attitudes towards consumption.

Table 4.3 Overview of questionnaire items measuring the targeted value paradigm of "social-ecological conscious consumption"

Source	Item	Targeted value orientation
OC	I try not to buy products made by companies which are socially and ecologically irresponsible	Social-ecological conscious consumption
OC	When shopping I regularly pay attention to the environmental friendliness of the products	
OC	I think that all this lifestyle and overconsumption is un-Indian. Foreign companies are just trying to make their profit with us	
OC	Indian people should always buy products made in India instead of buying imports from other countries	

OC own conception, *PVQ* taken from Portrait Value Survey based on Schwartz et al. (2001)

4.1.2.2 Tradition and Change

In a context of rapid and fundamental social-cultural change and in the midst of modernisation and rapid transformation processes, discourses on tradition and continuity tend to gain importance. Tradition, understood as commonly known and accustomed patterns of behaviour and a largely shared knowledge base about a characteristic cultural identity, is perceived to be challenged by processes of rapid change. More people are increasingly apprehensive of this perceived threat, and they become concerned about preserving their traditional values. Also among the Indian urban middle classes, it has been shown, for instance, that there is a tendency of religious revivalism (van Wessel 2004, p. 297; Varma 1998, p. 143). In such a context, measuring this concern and getting hold of the underlying oppositions and fields of tensions is fundamentally important for a segmentation based on social values. In following, the author will give an overview of the major lines of conflict and how these have been operationalised in form of items measuring these oppositions.

Religious Tradition

Very formative in early sociology is Max Weber's account on tradition, where he defines traditional action (traditionales Handeln) as one of four types of social action – one that is determined by settled habits and routines ("durch eingelebte Gewohnheit"). According to Weber, traditional action is quite far from meaningfully oriented action ("'sinnhaft' orientiertes Handeln"), rather being a reaction to a familiar stimulus based on customised attitudes (Weber 1922, p. 11). Thereby, Weber demarcates traditional action from instrumental-rational (zweckrational) and value-rational (wertrational) action (Weber 1922, p. 11). Deeply influenced by the processes of radical modernisation in Europe in the late nineteenth century, Weber conceptualises tradition as non-rational in opposition to rationally oriented modernity (Rosa et al. 2007, p. 23).

With this perspective on early European modernity, contemporary India offers some interesting parallels and features that are similarly challenged by recent processes of modernisation and globalisation. In particular, religious values that originate from a long history of written and orally traded Hindu mythology have a profound basis in the larger value system of the Indian culture. In an initial stage of this research, the author was quite moved by the writing of Max Weber on Hinduism in India (Weber 1986). Aiming to get hold of the question of why features of European enlightenment and modern culture emerged in the occident and not in China or India, Weber made a very thoroughgoing examination of "world" religions. The observations that Weber made on Hinduism start out at very foundational aspects of religion and culture, so that his findings after the passing of a whole century are still relevant, especially for an understanding of mythologically and religiously based traditions.

India's cultural historic background is characterised by a very broad spectrum of religious thought with polytheistic, animistic, pantheistic, monotheistic, and atheistic religious traits and a variety of religions that have emerged as a combination of these traits. Quite a few very important religions have their origin in India, and some of these have had a substantial impact on a global level. The constitution of India subsumes all religions that have their origin in India under Hinduism or Hindu religion and such a broad definition indeed makes sense, due to the historical background of the concept (von Stietencron 1995:143f). Hinduism in fact comprises a conglomeration of different religious thoughts and traditions, which in part also have different origins and which are based on different holy scripts (von Stietencron 1995:144). The author of this study therefore refers to this wider context and notion, when talking about Hinduism.

Max Weber's analysis of Hinduism mirrors a quite bleak picture of the foundations of Indian culture, where he argues that in contrast to, e.g. China, for instance, Indian religiosity gave birth to an ethic which is theoretically and practically the most world-denying of religious ethics that has ever existed:

> *Das Gebiet der indischen Religiosität […] ist im stärksten Kontrast gegen China die Wiege der theoretisch und praktisch weltverneinendsten Formen von religiöser Ethik, welche die Erde hervorgebracht hat*. (Weber 1986, p. 536)

Based on this general observation, Weber argues that asceticism and contemplation have their earliest roots in Hindu religion. He states that asceticism is religiously rooted and that thereby wealth and worldly pleasures are negatively evaluated based on religious and moral arguments (Weber 1986, p. 536). This aspect is also relevant for a deeper understanding of the values of simplicity and thrift, which have been discussed in the section above. According to Weber, this cultural fact has its roots in the realm of religious tradition. Ghandi revived these ideals through his practised and widely promoted simple living.

Based on the idea of Samsara (transmigration) and the doctrine of Karman (retribution), two closely related aspects of Hindu rationalisation are found to build the foundation of a Hindu-specific theodicy. The answer to the question of how evil and suffering can exist under the eyes of an almighty creator, and the question of why

one deserves a certain social situation, is according to Weber very well and very logically laid out in the Karman doctrine (Weber 1986, p. 167). Weber calls this logic of a strictly rational and ethically determined cosmos a result of the most consequent theodicy which has ever emerged in history (Weber 1986, p. 168). Based on the Karman logic, any ethically relevant action inevitably affects the destiny of the actor, and this is linked to the social fate of the individual and her or his position in society and within the organisation of the caste system.

In this logic, illness, affliction, and poverty are result of self-inflicted misconduct in previous lives; through self-determined action, anyone is able to influence his or her destiny after rebirth. The Karman doctrine corresponds with the logic of an eternal world and with the rationality of the caste system. Despite the existence of cyclically recurring eons (yugs; see below), in which chaos, disaster, and destruction stands at the end of each cycle, there is no such thing as the last judgement in most Hindu doctrines. After each closed sequence, there is a restart or resurrection with a new, millions-of-years-long cycle. As part of this eternal system, there remains an important individual agency, which allows everyone to work on and improve her or his social situation in forthcoming lives, well-illustrated in the following quote from Weber:

> *Wenn das kommunistische Manifest mit den Sätzen schließt: »Sie« (die Proletarier) »haben nichts zu verlieren als ihre Ketten, sie haben eine Welt zu gewinnen« – so galt das gleiche für den frommen Hindu niederer Kaste. Auch er konnte »die Welt«, sogar die Himmelswelt gewinnen, Kschatriya, Brahmane, des Himmels teilhaftig und selbst ein Gott werden, – nur nicht in diesem seinem jetzigen Leben, sondern in dem künftigen Dasein nach der Wiedergeburt, innerhalb der gleichen Ordnungen dieser Welt. Die Ordnung und der Rang der Kasten waren ewig (der Idee nach), wie der Gang der Gestirne und der Unterschied zwischen den Tiergattungen und den Menschenrassen. Sinnlos wäre der Versuch sie umstürzen zu wollen. Die Wiedergeburt konnte ihn zwar hinab in das Leben eines »Wurms im Darm eines Hundes« führen, – aber je nach seinem Verhalten auch hinauf in den Schoß einer Königin und Brahmanentochter. Absolute Vorbedingung aber war in seinem dermaligen Leben die strenge Erfüllung seiner jetzigen Kastenpflichten, die Vermeidung des rituell schwer sündhaften Versuchs, aus seiner Kaste treten zu wollen*. (Weber 1986, p. 170)

Weber further argues that especially for members of lower casts, there is no reason for upheaval or for striving for societal progress. The only way of escaping from the eternal cycle of rebirth and re-death is seen in salvation through merits in this world based on the logic of caste ritualism and the doctrine of Karman (Weber 1986, p. 171). In consequence, agency for determining the promising outcomes of rebirth does not involve any possibility of improving the situation for others, for society, or the world as a whole. The scope for improvements therefore does not involve any possibility to change the predetermined character of the current life. Effects remain restricted to subsequent lives and to the personal level. To better understand this rather complex issue, it is instructive to explain some of the related concepts and show how they are connected.

The Karman (also Karma) doctrine builds on a Hindu mythologically informed worldview, which paradigmatically conveys a divine and otherworldly tone, with the concept of Brahman at its fore. Brahman signifies a unitary life force or Supreme Being that "connects all existence, […] [it] has no form nor shape, is timeless and

eternal, and is believed to pervade everything (animate and inanimate), and everything is it" (Deshpande et al. 2005, p. 132; cf. von Stietencron 1995, p. 150). This ubiquitous consciousness and witness of all existence is immanent in all humans as conscious Self, called Atman (von Stietencron 1995, p. 150). For humans to realise this unity between Brahman and Atman, i.e. the ultimate enlightenment, means to realise "salvation by release from karma, the wheel of rebirth" (Morris 1967, p. 591). Karman conceptualises the belief "that actions in one life determine fortune and status in the next" (Morris 1967, p. 590), and getting released from this eternal cycle of Samsara means to attain Moksha, the highest goal in Hinduism. How can this state of enlightenment be achieved, i.e. how can one remove "the layers of ignorance preventing one from being aware of the Atman" (Deshpande et al. 2005, p. 132)?

Mythologically, the answer can be found in the concept of Dharma. Dharma is understood as the rule of nature, and it provides an individual framework for righteousness, morality, and ethics. Dharma is the normative foundation of any human action and basis for a higher cosmic and moral order (von Stietencron 1995, p. 145). It provides every individual with his/her place in this hierarchical society, and his/her duties are prescribed by the caste of his/her birth (Sovani 1978, p. 651). Therefore, Dharma can be understood as the guiding principle for the way of life of every person to attain Moksha (Jain 2011, p. 110).

While the role of Dharma is very important on the individual level, the context of society plays a determining role for the individual, too. The Indian epic Mahabharata says: "Dharma is so called because it protects 'dharnat' (everything); Dharma maintains everything that has been created; Dharma is thus that very principle which can maintain the universe" (Lingat 1973, cited in Madan 1989, p. 117). That means, given that everyone follows his or her Dharma and seeks to be righteous, "Dharnat" is collectively protected from disintegration.

However, the Mahabharata and other Sanskrit texts known as Puranas also show that periodic destruction is inevitable as it is predetermined in the law of nature with the earth "being created and destroyed in cycles" (Narayanan 1999, p. 1). Calculations of time in Indian mythology are based on the concepts of Kalpa, Manavantara, and Maha Yuga. As concisely examined by Narayanan (1999, p. 2), 1 day in the life of Brahma represents one Kalpa, which again consists of a thousand so-called great eons, or Maha Yuga. The concept of the recurrent Maha Yuga contains four characteristic periods, (1) Krta or Satya Yuga, (2) Treta Yuga, (3) Dvapara Yuga, and (4) Kali Yuga. Kali Yuga is the age in which we live now. These periods are characterised in the Sanskrit texts, based on research done by Narayanan (1999, p. 2) as follows:

> *The golden age (krta yuga) lasts […] 1,728,000 human or earthly years. During this time, dharma or righteousness is on firm footing. Righteousness is on all four legs, if one uses a quadruped as the analogy. The treta age is shorter, it lasts […] 1,296,000 earthly years; dharma is then on three legs. The dvapara age lasts half as long as the golden or krta age; it is 864,000 earthly years […] and dharma is now hopping on two legs. During the kali yuga, the worst of all possible ages, dharma is on one leg and things get progressively worse. There is a steady decline through the yugas in morality, righteousness, lifespan, and*

> *in human satisfaction. This age lasts for […] 432,000 earthly years […] and this present cycle according to traditional Hindu reckoning is said to have begun around 3102 BC.* (Narayanan 1999, p. 2)

According to this mythologically drawn law of nature, with cycles of emergence and destruction, of harmony and sorrow, of beauty and hatred, the character of our time is unavoidable and cannot be changed through individual action. Hence, there are both a notion of genuine responsibility for societal and moral decay and a fatalistic view on human existence in relation to nature.

As part of the qualitative research, quite a number of informants drew on this mythologically informed image of a bleak future of humanity that interestingly links the loss of tradition and basic values with a geophysically driven catastrophic termination of human society, as is well described in the following statement:

> *There are many sins, and in the near future the world is going to end up; we are going to face a lot of problems, loss, earthquakes; what I feel, we are having a better life today, but in the future this might change, and also lot of changes within the people who will try to commit many sins, like they don't take care of the parents, they don't respect them, they don't take care of the sisters, killing wives; all such things take place and then there is the end for the world. […] As we are respecting my in-laws, maybe my children don't respect their in-laws […] and so on; it carries on and there is no end until the world ends up; like something bad will happen, Tsunami or earth quake. (Interview No. 009_2010_3_23: 11)*

Interestingly, the respondent highlights the role and importance of family values and kin-related moral issues (e.g. respect to elders). But who is seen responsible? It is not humanity or the intended actions of certain groups of people that are responsible for an assumed loss of values and traditions. It is much more understood as a God-given destiny and cyclical termination and re-emergence as described with the mythological concept of Kali Yuga. Another respondent was able to describe the effects of Kali Yuga quite illustratively as follows:

> *As I know from the mythology […] for every 7 villages there remains back only 1 village, the rest will be destroyed, like people die due to floods, earthquakes, and heat. […] Kaliyuga is nearing; all these signs are the signs for the world to end, like there are so many bombs, over rains, lot of heat. The time comes, when rocks or huge stones fly off in the air due to the wind. […] Today, people don't even give water to drink. […] In the worst days [of Kaliyuga] people will die without food. Right now, […] it is difficult to eat one meal every day. [People] are trying to kill each other by bomb blast; […] people die; there is no respect to elders; all these are sins. (Interview 011_2010_3_24: 11)*

Floods, heat, over-rains, storms – weather-related events take an important role in his explanation of Kali Yuga, as the climate is a strong natural player in affecting humans in their everyday life. It seems that the respondent perceives it as nature's strongest weapon to fight humans' mistakes. Moreover, he appears well informed about what actually leads to Kali Yuga and what the impacts would actually look like. Explanations on Kali Yuga from the respondents similarly attribute all kinds of moral misbehaviour (not worshiping God, not respecting the elderly, forgetting about God and moral duties once people become richer, etc.) to the mechanism of purification and eradication of the sinful due to God's revenge.

Kali Yuga is not a marginal issue just known by a few very religious people. It seems to have a space in daily interactions. For instance, one respondent explained that her servant keeps on saying that the world is ending in 2012, and her priest states "God is angry with the people. What sins we have done so we have to reap" (cf. case 23, female, 81 years old, high household income, graduate). When asked directly if this would be Kali Yuga, she answered: "May it be Kali Yuga, I don't believe it, but everyone keeps on talking about it".

Table 4.4 portrays the six questionnaire items that have been selected for surveying the most fundamental orientation of tradition – religious tradition. In the following, the author will give reference to a rather moderate orientation of Indian-specific traditionalism, which is crucially important as it seems to mediate between more religiously rooted traditional values and modernisation. The author assumes that these moderate traditional values – in the following subsumed under the notion of "family tradition" – form a compromise that allows a person to embrace "modern" lifestyle practices and at the same time not lose sight of passed-on core values and basic features of their parents' identity.

Family Tradition

As the above explanations show, the paradigm of religious tradition is deeply rooted in Hindu mythology and conveys a quite radical and fatalistic worldview. In consideration of the findings in respect to "modern" consumption and the associated ambivalences, one gets an idea of the complexity of this realm of value orientations. Based on these observations and the findings in the qualitative research, the author of this study argues that tradition and modernity cannot be understood as two opposites on a linear continuum. Tradition and modernity are rather complex notions with multiple facets that cannot be measured on a linear unidimensional scale. With

Table 4.4 Overview of questionnaire items measuring the targeted value paradigm of 'religious tradition'

Source	Item	Targeted value orientation
OC	I believe that human nature is bad, evil, and wicked. To maintain social order, the only means are coercion and punishment	Religious tradition
OC	We cannot do anything about our future, as the decline of the society is predetermined	
OC	People are like they are due to their actions and ways of living in their previous lives	
OC	We are living in the age of Kali/[for Muslims read "We are running towards the End of Time"]. Evil and immorality dominate and we cannot do anything about it	
OC	Whenever there is a difficult problem, it is better to leave everything to God	
PVQ	Religious belief; tries hard to do what her/his religion requires	

OC own conception, *PVQ* taken from Portrait Value Survey based on Schwartz et al. (2001)

the above-drawn focus on urban consumer culture, one extremely important realm of "modern" lifestyle has been delineated within the broader paradigm of hedonism and materialism. However, religious tradition is not necessarily an opposition to this hedonistic consumer culture, but there are clear lines of conflict between these two paradigms. Similarly, more moderate notions of Indian-specific traditional values, such as the often-referred-to ideal of the joint family and the norm of respecting elder people, is just an additional dimension of a differentiated view on the Indian social value system. This paradigm sets itself apart from the religious and mythological perspective with a rather secular framing. It emphasises the importance of naturally given in-group affiliations and related ideals of family and community. Thereby, it draws on related social-structural issues such as notions of extended family, related kinship ties, and roles and duties based on family and kin-related hierarchies, such as respect and obedience towards elders.

The dividing line between religion and secularism with respect to Indian traditional values was not intuitive at first. The author assumed that all items – also the more secular-oriented ones – would fall into the same dimension under PCA. In the explorative factorisations, it was therefore surprising to find statistical evidence for respondents making a difference along this line. The secularly framed position on tradition does not comprise otherworldly and fatalist propositions and rather builds on worldly and more rational statements. The differentiation between the two dimensions is very favourable for the analysis of social values with respect to tradition and modernity. This more differentiated framework is better able to depict the "different shades of modernity" (Brosius 2010, p. 31) and reveal more nuanced and socially specific orientations towards modernisation. It also contributes to better expose the ambiguities that arise in the midst of rapid social and cultural change.

For instance, a renunciation of religion does not necessarily include rejection of traditional values, such as those foundational for the family tradition paradigm. The following quotation illustrates this very well. It is taken from an interview with an upper-middle-class social worker, who regards herself to be very open-minded, modern, rational, and secular. She approved straightforwardly following all those norms and values which have been drawn as part of the family tradition paradigm:

> *I think there are some traditions that are really ridiculous, for example, if there is a solar eclipse and I am pregnant I have to lie down under the bed, I am sorry I am not going to follow that, and it means I am a bad Indian or bad Hindu, or bad Muslim? Sorry, than I am a bad Hindu, a bad Muslim, so what. But when I talk about traditions, the way we do Namaste or the way we are caring for our old people, […] or respect the old, regardless what they have done for me or how they have treated me for example, the typical mother-in-law and daughter-in-law kind of syndrome, if I have problems with my mother-in-law, still, she knows and I know that I will look after her when she is old, regardless of whether I am wearing a pair of jeans or a saree. Regardless of whether I have a tattoo, I will look after her, when she is old. I will not put her into an old people's home. I will sacrifice everything to ensure that this woman is looked after. So, those traditions, yes, I will uphold, but if you are talking about religious traditions, don't ask me, I am not religious, I don't believe in God! (Interview No. 014_2010_3_25: 18)*

In response to a more general question on tradition, she makes an upfront statement against religion and blind faith in God, and she very clearly differentiates between

religious and secular traditional values. Quite strikingly, without making any reservation, she emphasises the importance of giving unconditional respect and service to elderly members of the family, in this particular case, her own mother-in-law. She appears to quite strictly argue this traditional norm as being based on an inevitable law that has been inscribed everlastingly into the Indian culture and its basic value system. Consequently – according to her view – the same norm operates persistently and independently of any social-cultural change, meaning that a modern way of life (e.g. jeans, tattoos) does not counteract or oppose ideals of community and the joint family. And nor does a renunciation of religion – in her view – lead to a loss of general Indian traditional values that are not based on religion. This view is emblematic for all those members of the Indian urban middle classes who tend to have a rather global and cosmopolitan orientation and usually higher levels of education and income.

With some evidence, it can be stated that much of the social reality of the upper middle classes in urban India takes place in rather exclusive, closed-up, and air-conditioned spaces, which are elementary and determining for the overall socially fragmented urban landscape. This spatial context of modern urban lifestyle in India is very characteristic, and it structurally interacts with common features of consumption practices and ways of living: young urban professionals in Hyderabad are often forced into a nuclear family setup, they tend to bring up their children in internationally oriented private schools, they are usually bound to work 6 days a week, and usually they spend this time in suitable and air-conditioned office buildings and often tend to live in highly safeguarded spaces such as apartment complexes or gated communities. Quite a lot of their leisure time is spent within gated community areas or in similarly exclusive shopping malls, cinema halls, or secured parks.

Many of these controlled and well-organised spatial fragments of the city are created to convey a sense of distinction and exclusiveness that evidently differentiates from the so-far "unmodernised" India. And just in the way these exclusive spaces interact with "modern" lifestyle, so does the still ubiquitously visible traditional India oppose and challenge those who have distanced themselves through their social practices from this old way of life. While the rapid transformation processes drive many urban middle-class people away from passed down practices and their traditional way of life, they will still uphold well-known and very basic traditional values. And probably this fear of losing one's own cultural identity makes people even more likely to uncritically embrace family traditional values, maybe as an ethical compensation to the substantial changes in the practical ways of living and consuming.

The following quote from a middle-class woman, who lives with her husband, her mother in law, and her 3-year-old son, illustrates a critique that is often raised and which can be seen as representative for a more general discourse that turns around common features of modern urban lifestyle in Hyderabad:

> *There are a lot of changes, people are not respecting their elders and this is a tremendous change. All this is because of the higher studies and going abroad and coming over from there people are not giving respect to their parents, also elders. Overall, the way of talking to the elders, the way they speak without any respect. They forget the culture where they were*

born and brought up; they try to follow the culture, which they see abroad and try to adopt. This is not good; we should follow our own culture. (Interview No. 008_2010_3_23: 6)

The respondent directly refers to an increased interaction with and influence from the Western world through migration and higher education. In her view, globalisation and the advent of modernity have started to transform basic cultural norms that are foundational for the Indian culture. Her bleak analysis addresses an allegedly unprecedented intergenerational conflict based on a loss of respect towards elders, which is – according to her observations – driven forward by people who try to emulate a Western lifestyle (cf. van Wessel 2001, p. 133f). As in some other instances of such moral ambiguities (see above; cf. van Wessel 2001, p. 243), she excludes herself from this diagnose and takes a strong position of resistance against this charge, being aware of the continuity of this norm that resides within herself. This continuity remains not only because she herself lives the ideal of the joint family. It is even more so because the underlying values persist through derived images of an ideal situation that is continuously contrasted with the present reality.

Kin-related hierarchies ("respect to elders") and the commonly upheld ideal of the joint family are quite striking in this context. In culture and personality studies, the sense of affiliation to a naturally given in-group such as the family is conceptualised as "collectivism" and in some cases even more specifically as "vertical collectivism" (Triandis 2002, p. 139). According to Triandis (2002, p. 139), "vertical cultures are traditionalist and emphasise in-group cohesion, respect for in-group norms, and the directives of authorities". Moreover, vertical collectivism is regarded to "correlate with right wing authoritarianism […], the tendency to be submissive to authority and to endorse conventionalism. Both vertical collectivism and right wing authoritarianism correlate positively with age and religiosity, and negatively with education and exposure to diverse persons" (Triandis 2002, p. 139). The author rejects the statement that the Indian culture is a vertical culture. However, it is indicative that some of the mentioned studies have figured out cultural traits in the Indian context that are very closely related to the structure of the family tradition paradigm in this study.

Table 4.5 depicts an overview of the included questionnaire items that were created in order to measure the value orientation paradigm of family tradition. A more item-specific discussion of this and all other paradigms and their associated variables is given in Sect. 5.2.3.

4.1.2.3 Other More General Values: Schwartz Values and Values Towards Community and Sharing

Values are abstract concepts or beliefs that refer to motivational goals or guiding principles in the life of a person, i.e. values express aspects of foundational meaning and identity of a person. Apart from the very critical value dimensions outlined above, i.e. values informing attitudes towards tradition and modernity and towards

Table 4.5 Overview of questionnaire items measuring the targeted value paradigm of "family tradition"

Source	Item	Targeted value orientation
OC	I believe in our society marriages should take place within one's own caste/community	Family tradition
PVQ	Tradition is important; tries to follow the customs handed down by her/his family	Family tradition
OC	Obedience and respect for elders is a very important value and should be maintained	Family tradition
OC	In matters of marriage, boys and girls may be consulted, but the final decision should be taken by the parents	Family tradition
PVQ	Always behave properly; avoid doing anything people would say wrong	Family tradition
PVQ	Be obedient; believes s/he should always show respect to her/his parents and to older people	Family tradition
OC	I believe in the joint family system. One should subordinate one's needs, wants, desires, and aspirations to those of the family	Family tradition
OC	I think it is not possible to maintain the Indian tradition of the joint family system. Old age homes are a good alternative	Family tradition

OC own conception, *PVQ* taken from Portrait Value Survey based on Schwartz et al. (2001)

consumption and thrift, the author has included more general values from the Schwartz Portrait Value Questionnaire (PVQ) (Schwartz et al. 2001, p. 520).

The value model suggested by Shalom Schwartz (1994) builds on ten general social value orientations. The values are conceptualised in regard to their final goals in opposition to each other. According to the theory, these oppositions between competing values become clearer in Fig. 4.3. It organises the value orientations along two bipolar dimensions with two respective higher-order value types. In this way, "self-transcendence" contrasts with "self-enhancement"; "openness to change" opposes to the higher-order value type of "conservation". Schwartz' theory has been tested in several countries, and the model has proven to be transferable, albeit different cultures differ in their specific structure of values (Schwartz et al. 2001).

The first bipolar dimension contains self-transcendence in opposition to self-enhancement. Values of self-transcendence (universalism and benevolence; see Table 4.6) are critically important in regard to sustainable lifestyles as they define the extent to which values motivate people to transcend their own interests and promote the welfare of others.[3] Social-ecological concern is closely related with the general social value of universalism. Schwartz (1994, p. 22) describes the value with notions of "understanding, appreciation, tolerance, and protection for the welfare of all people and for nature". It conveys a rather extroverted attitude and implies

[3] Apart from the dimensions outlined in this chapter, four additional items have been included in the survey based on the Portrait Value Questionnaire (PVQ). Two items were selected covering the dimension of "security", which range closely with the dimension of tradition. Another two items addressing "self-direction" fall in the dimension of "openness to change" and neighbours with stimulation and hedonism according to Schwartz et al. (2001, p. 521f).

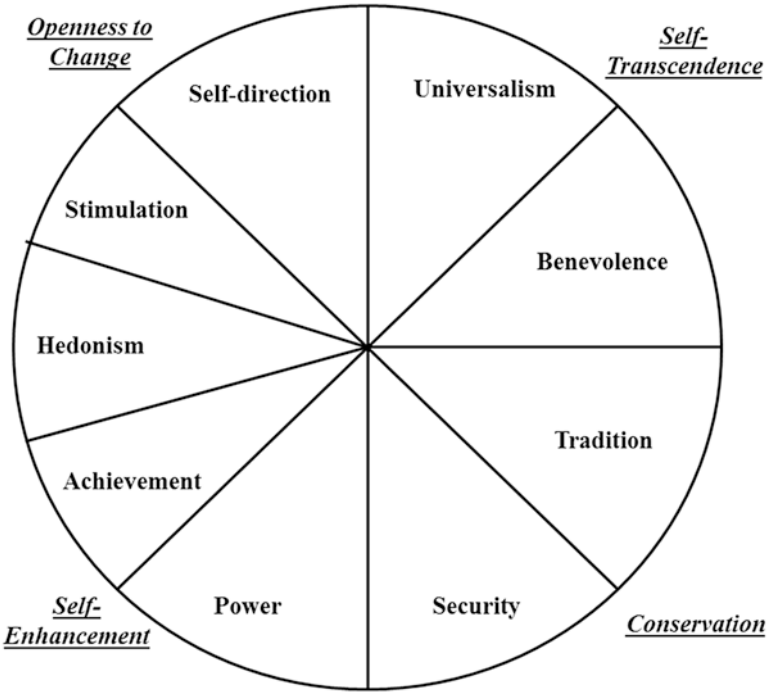

Fig. 4.3 Adapted model of Schwartz' theory on universal aspects in the structure and contents of human values, their relations, higher-order value types, and bipolar value dimensions. (Figure adapted from Schwartz 1994, p. 24)

interaction with society and environment. The locus of control over the outcomes of events and situations is therefore rather internally situated, and respondents supporting this paradigm tend to also have much higher levels of self-efficacy compared to, e.g. supporters of the rather fatalistic paradigm of religious tradition (see above). With its quite explicit social and ecological perspective, it also counters the hedonist conspicuous consumption orientation (see above). According to Schwartz' theory, universalism is highly oppositional to hedonism, as depicted in Fig. 4.3.

Benevolence, according to the Schwartz value theory, builds the second component of self-transcendence. It embraces "preservation and enhancement of the welfare of people with whom one is in frequent personal contact" (Schwartz et al. 2001, p. 521). The values benevolence and universalism are conceptualised in opposition to the value dimension of self-enhancement (achievement and power, see Table 4.6). The orientation towards self-enhancement tends to motivate people to improve their own situation also against the interests and benefits of others (Schwartz 1992, p. 42f). This is "power" on the one hand, which delineates "social status and prestige, control or dominance over people and resources". On the other hand, it is achievement, which involves "personal success through demonstrating competence according to social standards" (Schwartz et al. 2001, p. 521).

Table 4.6 Overview of questionnaire items measuring the targeted more general values based on Portrait Value Questionnaire (PVQ) and others

Source	Item	Targeted value orientation	Higher-order value dimension
PVQ	Believes that people should care for nature; looking after the environment	Universalism	Self-transcendence
PVQ	Every person in the world should be treated equally; everyone should have equal opportunities in life		
PVQ	Everyone should be treated justly; the weakest in the society should be protected		
PVQ	Help the people around her/him; wants to care for their well-being	Benevolence	
PVQ	Respond to the needs of others; tries to support those s/he knows		
PVQ	Be in charge and tell others what to do; wants people to do what s/he says	Power	Self-enhancement
PVQ	Wants to be the one who makes the decisions; likes to be the leader		
PVQ	Being very successful; hopes people will recognise her/his achievement	Achievement	
PVQ	Wealth and prosperity; believes that it is a sign or doing it better than others		
PVQ	New ideas and being creative; doing things in original way	Self-direction	Openness to change
PVQ	Make her/his own decisions about what he does; likes to be free and not depend on others		
PVQ	Looks for adventures; wants to have an exciting life	Stimulation	
PVQ	Likes surprises and is always looking for new things to do; do a lot of different things in life		
PVQ	Government ensures her/his safety against terrorism; government should be strong to protect its citizens	Security	Conservation
PVQ	Live in secure surroundings; avoids anything that might endanger her/his safety		
OC	I would be willing to work together with others to improve my neighbourhood	Community and sharing	n.a.
OC	I really appreciate sharing and exchanging things with friends and neighbours instead of buying so much new stuff		

OC own conception, *PVQ* taken from Portrait Value Survey based on Schwartz et al. (2001)

Interesting also for the analysis of attitudes towards change and modernisation are values within the dimension "openness to change". These are "hedonism", which has been already addressed in the chapter above (values towards consumption; see Sect. 4.1.2.1 above), "stimulation", and "self-direction". "Stimulation" is an orientational pattern, which strives for excitement and novelty. A person who follows this paradigm tends to seek for challenges in life (Schwartz et al. 2001, p. 521). Similarly, self-direction is a value that creates an attitude of independent thought and action-choosing, creating, and exploring (Schwartz et al. 2001, p. 521). Situated in direct opposition to this dimension is "conservation", with the values of "tradition" and "security". Tradition has been treated already above as part of Sect. 4.1.2.2. Security as conceptualised in the Schwartz theory is situated very close to traditional values, with strong preferences for "safety, harmony and a stable society. People following this paradigm seek for stability of relationships, and of the self" (Schwartz et al. 2001, p. 521).

In sum, Schwartz' values form a comprehensive set of general social values, and the model allows measuring and comparing the structure of individual value orientations. In addition to these rather general and field-tested attitudinal items, the author has included two more self-conceptualised items that build a value dimension, which increasingly gains importance in the light of global challenges, such as climate change, environmental degradation, and economic crisis. This value dimension is an attempt to measure motivational goals that seek answers and try to directly respond to the limits-to-growth dilemma (Meadows et al. 1974) in search of alternative approaches to the future of humanity. The trend of sharing and collaborative consumption, which is more prevalent in Europe, is based on the principle of sufficiency and aims to avoid unnecessary consumption of resources (Belk 2014, p. 1596f). Also in urban India, a few initiatives refer to the principles of sharing and collaborative consumption. However, this trend still operates very subtly and becomes visible only on neighbourhood level. In Bandra West, Mumbai, for instance, a small neighbourhood-based "free market" (give-away shop) has been established by a group of citizens who got to know about and experienced the idea themselves during a visit to Berlin. Other initiatives and ideas have been communicated as part of informal talks by the author to students and young professionals in Hyderabad. The idea of voluntarily working together with and for the community was an interesting aspect also in reference to the ideal of sharing and collaboration.

The conceptualised items measure first, the willingness to work together with others to improve one's own neighbourhood. The second item addresses the issue of sharing by asking the respondent to indicate the level of appreciation of sharing and exchanging things with friends and neighbours instead of buying new things. Table 4.6 gives an overview of all included general value items as delineated in this chapter.

4.1.3 The Descriptive Level: Routines and Behaviour, Investive Consumption, and Social Position

Measuring values and attitudes is a challenge as results highly depend on the selection of items, which in itself is subjective. The range of general issues and everyday-life problems that can be drawn upon in order to form a broad and comprehensive measurement tool is nearly infinite. In consequence, the author had to be very careful in selecting the dimensions of measurement. The above-given theoretical and contextual considerations illustrate the complexity of this endeavour. As the measurement of values and attitudes builds the substance for the segmentation of value orientation groups, the author has put due emphasis and consideration on this conceptualisation. Much of this research process was deeply informed by the wider context of the research as it was outlined in Sect. 4.1.1 above.

The conceptualisation of the descriptive level was more straightforward and involved mainly methodological challenges. In particular, the carbon calculator and the measurement of investive consumption posed some methodological problems, as it was important to arrive at a solution with a clearly laid-out number of dimensions. This clarity was not trivial, because a too-large number of dimensions for the description of the value segments would involve problems of comparability. In the following, the conceptual aspects of the descriptive level will be laid out.

4.1.3.1 Social-Economic Position (SEP)

The social-economic position (SEP) is a crucial aspect for analysis of lifestyle as well as for any other social structure analysis. It is also widely used in more applied research domains, especially in epidemiological research (Howe et al. 2008, p. 2). It aims to differentiate the population based on life chances and living situation. SEP subsumes a multiplicity of advantages and disadvantages of a person, and unlike the concept of social stratum (Schicht), it allows the whole population to be categorised, including those, e.g. who are retired or those who have no income, such as housewives or students (Hradil 2001a, p. 371). SEP delineates all those aspects of living that can directly be experienced, quite similarly to with the German sociological concept of *Lebenslage*:

> *Der Begriff der Lebenslage [richtet sich] auf die unmittelbar erfahrbaren Lebensbedingungen eines Menschen (auf die jeweilige Kombination seines Einkommens, seines Bildungsabschlusses, seiner Wohnbedingungen usw.).* (Hradil 2001a, p. 374)

Lebenslage is as comprehensive as SEP, but it is usually conceptualised as an alternative to class or social stratum. In this study, relevant social-economic factors are consulted as individual descriptive measures in order to describe and compare the value orientation clusters.

In this study, SEP is conceptualised quite broadly with variables such as education, employment, caste, age, gender, religion, marriage, household size, income, as

well as household and personal assets.[4] Education is measured on personal respondents' level, but in addition, the author has included questionnaire items that aim to get hold of the parents' educational level to measure cross-generation educational mobility. The classification of employment is based on the Goldthorpe classification (Evans 1992).

Caste is another highly relevant marker of vertical social-cultural differentiation. Based on communications with experienced social science researchers in Hyderabad and respondents in the qualitative interviews, the author was aware that surveying caste bears huge risks of social desirability bias. Nevertheless, the author had to include this aspect in the survey and in the evaluation of SEP. Responses on caste and tribal background were therefore kept open at first, without providing the respondent with a fixed choice set of answers. From the answers, the author has classified respondents based on Indian most-basic census categories of scheduled caste or scheduled tribe and general caste.

Respondents were also asked whether the household housed daughters who were not yet married. This aspect was surveyed, although it was not assumed to have such an effect on consumption and behaviour as was discovered in the final analysis (see Sect. 6.4.1). An item was also included to ask respondents whether they had own children still living in their household.

In evaluating SEP in empirical research, monetary measures such as income or consumption expenditure are often used as an exclusive measure. This is despite the general recognition that these measures usually fail to capture the diversity of well-being (Howe et al. 2008, p. 2). Moreover, income and consumer expenditure require extensive resources for household surveys (Vyas and Kumaranayake 2006), and especially household income is very difficult to measure, as explained in detail, e.g. by Shea Rutstein and Kiersten Johnson (2004): *First*, most people do not know their income or only know it in broad ranges; this is especially true for aggregate household income. *Second*, people are likely to hide their income for fear of government intervention. *Third*, income is not always pooled together by all household members. *Fourth*, household income can have various sources and is often variable daily, weekly, or seasonally. *Fifth*, it is also difficult to value home production and unpaid production of goods and services in a household. And *sixth*, there is the problem of unearned income, such as that gained through interest on loans, property rents, or gambling winnings (Rutstein and Johnson 2004, p. 2f). However, income is and remains a very crucial factor for lifestyle, because income determines the scope of choices concerning consumption. Income, for instance, allows one to understand the phenomenon of respondents with high levels of income and even so low levels of consumption. Neither consumer expenditure nor asset indices allow for a revelation of this highly relevant phenomenon.

[4] The author has also included other questionnaire items, some of which have not been mentioned here. All those variables were included, which have proved to have a significant differential effect from being member of the value orientation clusters. The results of these variables in regard to effects on cluster membership have been depicted in Annex VII.

Therefore, income has been included as one important factor of SEP. In order to allow for an income evaluation of respondents without personal income (e.g. housewives, students, etc.), household income has been surveyed and equivalised according to the household size (see Sects. 5.1.4 and 6.2). However, due to the mentioned drawbacks, an alternative measure has been searched for to also assess SEP in non-monetary terms. One such approach is the asset-based approach that has arisen from demographic studies such as the Demographic and Health Survey (DHS) (Rutstein and Johnson 2004). The asset-based approach builds on collecting information on ownership of a range of durable assets (e.g. car, refrigerator, television), housing characteristics (e.g. material of dwelling, floor and roof, toilet facilities), and access to basic services (e.g. electricity supply, source of drinking water) (Howe et al. 2008, p. 2). As it allows for flexibly integrating a whole set of multiple variables, this measure allows for social-economic differentiation across all social segments. It equally includes very basic amenities such as a mattress or a biomass cooking stove (chullaha) in the same way as air-conditioners and cars. However, these assets are statistically weighted through the well-established methodological approach of PCA based on intercorrelations. Many surveys use this index as a proxy for income or as a reliable indicator for consumer expenditure (see, e.g. Filmer and Pritchett 2001; Howe et al. 2008; Rutstein and Johnson 2004; Vyas and Kumaranayake 2006). In this study, it is used as a subsidiary measure of income in order to identify reporting inconsistencies in respect to income. It also functions as an indicative variable among others for the evaluation of SEP.

In addition to this subsidiary function of the index as part of SEP, the author has conceptualised the dimension of asset ownership in a different and more lifestyle-specific way. The ownership of assets – be it on personal or household level – indicates to the level of a quite specific realm of consumption, which the author defines as "investive consumption". Characteristic for this realm of consumption is the rather long-term use and the long-term lifestyle-defining character of these goods and services in this category. The specific features of "investive consumption" will be delineated in the following.

4.1.3.2 Investive Consumption

The concept of "investive consumption" builds on the idea of measuring and weighting ownership of durable consumer goods that symbolise quite long-term financial investments of a person or household into wealth and status. Asset-based indices have been widely applied for evaluating social-economic position (SEP) and for providing an alternative proxy for income. In this study, the asset-based index is additionally conceptualised as a tool to reflect and evaluate the level of long-term investive expenditures on assets and amenities, be it on personal or the household level. For this purpose, the asset-based index is even more accurate and much closer to evaluating a person's or household's capability of gaining and exhibiting social-economic status based on ownership of durable assets (e.g. air-conditioner, car), infrastructure, and housing characteristics (e.g. employment of servants, source of

water). For instance, Filmer and Pritchett (2001, p. 116) argue that the asset index is not a measure to account for current consumption expenditures; it is much more viewed as a "proxy for something unobserved: a household's long-run economic status". Hence, the asset-based index is a tool to measure a highly relevant dimension of consumption. It captures social-economic status independent of short-term fluctuations in income and expenditures.

Conceptually most critical in this context is the intermediating role of "investive consumption" for the foundational elements of the lifestyle concept: a household's stock of material assets (measured with the asset-based index) can be viewed as a function of financial-economic capability (often evaluated on the basis of income or consumer expenditure) on the one hand and values and attitudes towards consumption and lifestyle on the other hand (see Fig. 4.4).

High levels of income do not necessarily translate into high levels of consumption. Overall, household consumption levels highly depend upon decisions being made with regard to saving and investments. Existing household infrastructure, market conditions, the cultural context, other contextual issues and boundary conditions, and in particular values and attitudes of (influential) household members play a significant role in consumer decision-making (see Fig. 4.4 for a very simplified model). For instance, quite a few respondents in the qualitative survey have raised concern against modern consumption, referring to notions of simplicity and thrift (see Sect. 4.1.2). However, as will be shown in the following (see also Sect. 4.1.3), behaviour and consumption is not necessarily based on choice and decision-making. Routines and patterns of behaviour, in particular, are not repeatedly reflected and consciously decided upon by the individual, and hence, they are not so much based on choices being made. On the contrary, larger investments are usually based on conscious decisions. For instance, whether an air-conditioner is being switched on when it is hot is not so much a matter of choice. In many cases it is rather based on repeated, reactive, and known patterns of behaviour. However, buying an air-conditioner is based on a usually well-thought-out consumption decision. What is most relevant in this illustrative example is the fact that the individual has access to an air-conditioner (AC), i.e. a routine of using the AC has evolved largely because an AC has been purchased for the household. Contrary to the routine-based use of

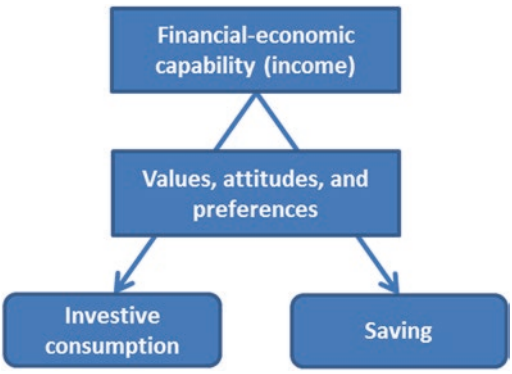

Fig. 4.4 Simplified model of consumer decision-making with regard to investive expenditures (investive consumption). (Source: own draft)

an AC, which happens to be rather subconscious and unreflected, it is this purchase decision of buying an AC that is based on a consciously made choice.

This differentiation is one of the foundational assumptions being made in this study. It is the attempt to address a fundamental critique being raised especially from the viewpoint of social practice theory, that much environment-related social science research is based on the ABC paradigm (see Sects. 2.2.2.5 and 4.1.3.3). Investive consumption is based on rather consciously made choices to invest in or to purchase certain long-term consumer goods (e.g. AC, car, and motorbike), contract-based long-term service arrangements (e.g. employment of servants), or household infrastructure (e.g. a private water connection). These investive consumption goods tend to be relatively more costly, and they are usually used within longer time horizons.

Most critical in this regard, the ownership of many of these durable assets tends to create path dependencies for conduct of life, daily routines, and everyday consumption (as shown for the case of the AC). Many durable consumer goods are able to influence and in some cases even determine certain aspects of living. The above-given example of the purchase decision to buy an AC has illustrated the potential of path dependencies associated with the investment in long-term consumer goods. And such a decision has therefore several implications for the analysis of lifestyle. Owning an air-conditioner in the Indian context is not so common, and therefore having one involves a high potential for a gain in status. As an air-conditioner is highly visible and as it provides a means to please the guest with comfort, it is an item which exhibits a certain social-economic status.

Moreover, also concerning personal-level carbon footprint analysis, a differentiation between everyday and investive consumption is of due relevance. As the ownership of certain durable consumer goods tends to translate into particular long-term patterns of consumption, it is in fact these path dependencies that allow for an evaluation of the long-term environmental or climate-related impact of investive expenditure decisions. The author has therefore developed an approach to estimate the personal-level average emission effect of selected investive expenditure decisions, such as the purchase of a car, motorbike, air-conditioner, washing machine, etc. With this estimation, the study provides an overview of key points of intervention (cf. Bilharz and Cerny 2012). It indicates the relevance of path dependencies that investive consumption decisions pose, and it allows for assessing the reduction potential that avoidance of certain investive consumer goods may have. The latter point may be of interest in particular for consumers, who thereby are provided with relevant information in regard to the long-term effects of investment decisions (see Sect. 4.1.4).

4.1.3.3 Routines and Patterns of Behaviour

Environmental research that focuses on the impacts of human behaviour on the environment and climate change has been criticised to emphasising consumer choices too much and neglecting the relevance of routines, habits, and patterns of

behaviour. Following Giddens, Spaargaren (1997, p. 30), for instance, argues that consumers are deeply involved in producing and reproducing structural constraints and opportunities and that as a result, domestic practices are both "actor driven and system imposed". Similarly, Elisabeth Shove states that environment-related social science research commonly follows the "dominant paradigm of 'ABC' – attitude, behaviour, and choice" and challenges the assumption that behaviours are largely being motivated by beliefs, values, attitudes, and preferences (Shove 2010, p. 1273). Shove, Watson, and Ingram contend, "consumption is embedded in relatively inconspicuous routines occasioned by the characteristically mundane socio-technical systems of everyday life".

This argument is duly relevant for an understanding of the cultural dimensions of ordinary consumption. Large shares of personal and household GHG emissions can be traced back to those areas of consumption that are – as Shove (2003, p. 9) rightly states – customary and based on everyday practices. These everyday practices are "undertaken in a world of things and sociotechnical systems that have stabilising effects on routines and habits" (2003, p. 9). The theory on social practices, however, focuses on these aspects of everyday life, while the individual level, values, attitudes, and preferences are less important or even neglected. The lifestyle concept, on the other hand, allows for an integration of both, taking into account the more conscious consumption choices (in this study framed under the concept of investive consumption; see above) as well as behaviour, which functions more implicitly, subtly, and based on routines and habits.

Routines and patterns of behaviour are conceptualised in this study as human activities that are conducted by the same person repeatedly in very similar ways and patterns. The conduct of routines and behaviour patterns tend to take place subconsciously and largely without reflection. Reflection upon these habits and routines can be triggered, for instance, when the actor is confronted with the electricity bill (e.g. in the case of using an air-conditioner) or when any other irregularity disturbs the routinised act of doing something (cf. Spaargaren 1997, p. 28).

Lüdtke (1989, p. 40) states that lifestyles primarily evolve on the basis of private investments and consumption decisions. In fact, larger investments are not only most visible for the social environment and instrumental for social distinction, but larger investments to a great extent also provide the long-term and path-dependent infrastructure for lifestyle (e.g. car, washing machine, air-conditioner, see Sect. 4.1.4). Accordingly, operationalising the dimension of performance with a strong focus on consumption and investments is in line with Lüdtke's observations and allows for a more targeted analysis along the lines of the most constitutive elements of lifestyle-specific practices.

These everyday patterns of behaviour and daily routines are among the most relevant aspects of lifestyle for environment-related lifestyle research. In particular, it is all those areas of everyday routines where consumption of resources and the release of GHG emissions play a role. Any of these routines usually involves a multiple set of complex direct and indirect impacts on the environment. By means of the

qualitative study, the author has identified a number of dimensions in the everyday life of people, which are, *first*, relevant for people in Hyderabad across all social segments. This aspect is important for the purpose of comparison among and between different social-cultural segments of the urban population. *Second*, it was maintained that the selected dimensions of routinised behaviour involve sufficient variance for the purpose of differentiation. And *third*, attention was paid to the fact that the selected areas of consumption and behaviour involve aspects relevant to the subject of climate change, most importantly in regard to the effects (GHG emission).

The identified areas are *shopping*, *leisure*, and *holidays*. *Media use* has also been included, as it represents an additional indicator interesting for environment and climate-related lifestyle research, namely, education, knowledge, and awareness with regard to environment and climate change. Moreover, *expenditure on internet* as an indicator for the use of the internet, the level of *meat consumption*, and the *dominant mode of transport* were included in the analysis. All areas of consumption behaviour and everyday routines have been selected based on the insights gained from the qualitative study. Participant observation has also been highly relevant in this regard. Especially concerning shopping, leisure, and holidays, the author had to cover a broad spectrum of possibilities in order to allow for differentiation across all social-cultural segments.

4.1.3.4 Carbon Calculator

Besides the segmentation of value orientations, it is the carbon calculator which represents the centrepiece of the overall analysis in this study. The carbon calculator was developed based on experiences from the GILDED Project (Peters et al. 2013, p. 226ff) and based on the findings of the preliminary qualitative study. Apart from the conceptualisation, the most fundamental input for the calculator was based on the consultation of a database that contains a comprehensive set of Indian-specific and in part regional-specific emission factors. This database has been computed and compiled by no2co2 (Gilani 2010, 2012), a core project partner of the Sustainable Hyderabad Project. These emission factors were compiled using a number of different approaches, including primary research of industry data and technical literature review. Some of the emission factors were also suggested by the IPCC Tier1 Emission Factor Databases. The database of factors does not claim covering the entire product life cycle. For some resource uses, only direct emissions from fuel combustion and electricity consumption have been considered (Gilani 2012, p. 4). The database has been verified and validated by the Indian Institute for Management (IIM) and by the School of Public Affairs, University of Colorado Denver. According to our research, the provided factors are the most accurate factors available for India, even though they should be used for indicative purposes only, have a finite degree of uncertainty, and are expected to vary with time (Gilani 2010, 2012).

The carbon footprint of a person or household is an approximated reflection of all direct and indirect GHG emissions released as an effect of a person's or household's overall consumption. It is measured in tonnes of CO2equivalents (CO2e) for a time horizon of generally 1 year. The amount of GHG emissions released as an effect of an activity (e.g. consumption of a particular good or service) is expressed in sum through an emission factor. Hence, an emission factor is the rate of GHG emissions of an activity measured per unit with an inclusion of output as well as the input of all resources and by-products.

A direct measurement of personal-level GHG emissions by means of a household survey requires a well-balanced approach between maximising of accuracy and practicality. It is not feasible to cover the whole life cycle of all goods and services being consumed by each person of a household. Nor should the calculation be too vague and cover only direct emissions. At the time, when the survey was conceptualised, there were only a limited number of emission factors available, and these related mainly to those activities and goods that are most relevant for carbon footprinting, such as motorised transport and electricity consumption. Besides restrictions in regard to the availability of emission factors, the author had to limit the number of questionnaire items, partly because surveying of consumption data demands quite some time and space.

In order to justify all the above-mentioned requirements within the given scope of possibilities, the author selected the following realms of consumption for the carbon calculator: (1) private motorised transport, (2) public transport (intracity transportation), (3) long-distance travel (train, bus, and air travel), (4) food consumption, (5) electricity, and (6) cooking. The set of selected aspects is on par with existing carbon calculators in Germany (e.g. Umweltbundesamt Calculator, see www.klimaktiv.co2-rechner.de/) or in India (e.g. no2co2 calculator, see www.no2co2.in/). Overall, this calculator offers a simple measurement of the most relevant domains of consumption in regard to household-level and personal-level GHG emissions. Ideally – based on the surveyed data of this study – it would have been feasible to also estimate the amounts of emissions associated with the incorporated emissions of consumer durables, such as electronic items, white goods, etc. However, reliable emission data on such incorporated emissions of major household equipment was – at the time of this analysis – not available. However, from this research and from the emissions calculations, the author has developed a new approach to estimating average emissions associated with the use of certain technologies. This methodological approach is outlined in the following.

4.1.4 *Consumption-Practice-Oriented Carbon Footprinting to Measuring GHG Emission Effects of Consumer Decisions*

In Sect. 4.1.3.2, the author has highlighted the relevance of investive consumption for the analysis of lifestyle. Investments in household and personal, more durable assets and amenities tend to determine associated consumption practices for longer time horizons. Such investive consumption decisions often create path dependencies that substantially structure consumption patterns of households and individuals. The decision to buy a car or the fact that a car is accessible for an individual is likely to considerably affect the person's mobility pattern and is likely to determine the person's dominant mode of transport. The same applies, e.g. to the purchase of an air-conditioner that is usually bought for using it for cooling the house or apartment. As an effect, other lower-carbon room conditioning practices tend to lose relevance. The author has therefore considered the possibility of estimating the effects of such investive consumption decisions in terms of average increases in the overall carbon footprint of individual consumers. Similarly, it is possible with such an approach to get hold of emission effects of lifestyle-related consumption decisions or routines, such as the regular consumption of meat or dairy products.

With the focus on GHG emissions, the spectrum of consumption practices relevant for the analysis is straightforward. Moreover, almost all of these relevant practices can be traced back to a certain social-technical system, the material and technical basis of a consumption practice. Only with regard to food emissions is the material dimension nontechnical. For all other sectors, the practices are coupled to a material dimension that is based on technology, and this is in particular true for all those practices that are most relevant in regard to GHG emissions: almost 50% of all individual carbon footprints are from the household-based use of electricity and therefore can be traced back to the usage of electric household appliances. Another 16% per average goes back to individual motorised transport and the use of motor vehicles which are owned in common by members of the household. Moreover, there are emissions from the use of cooking fuels, making up 8% of all surveyed personal GHG emissions. These emissions are also related to and require durable cooking appliances such as LPG or kerosene stoves.

Other than the above-mentioned sectors of consumption, taking up a specific practice in the realm of public transport and long-distance travel does usually not require an initial personal investment in any technical equipment or any long-term contract (except, for instance, monthly bus tickets). That people often remain true to established practices in this sector is rather related to routines and the familiarity and knowledge that people gain from the recurrent character of the practice.

The approach does not require other data than those surveyed for the carbon calculator and the wealth index. With such a perspective, it would also be possible to analyse the practice-related symbolic meanings and individual motivations of people who 'carry' specific social practices. But that would require a more practice-specific approach concerning the survey. With the focus on lifestyle as in this study,

an analysis of such scope is not possible, but the author has made the attempt to measure practice-specific average GHG emissions. The author exemplifies this attempt in the form of an "excursus" that is assumed to facilitate an understanding of lifestyle-specific differences in consumption patterns and personal GHG emissions. It also aims to explore the relevance and scope of this simple methodological approach.

4.2 Methodological Approach

4.2.1 Research Design and Methodological Approach

The research process of this study builds on three important methodological components: first, an explorative phase, which informed the author's understanding of the research context in Hyderabad, of its major stakeholders engaged in the field of sustainable urban development and climate change mitigation (cf. Reusswig et al. 2012), and of the role and quality of climate change perception among the public as well as among relevant experts and stakeholders (Reusswig et al. 2009; cf. Reusswig and Meyer-Ohlendorf 2010, 2012). Second, a qualitative household survey with semi-structured interviews was conducted in order to assess the public awareness, understanding, and perception of climate change (cf. Reusswig and Meyer-Ohlendorf 2010). The qualitative survey also provided the basis for developing and testing the proposed carbon calculator that represents a core element of the following quantitative analysis. Most important for this study, however, was to explore, assess, and test relevant indicators for measuring cultural and context-specific attitudes and values as well as consumption and behaviour patterns, relevant to anthropogenic climate change.

The third and most critical component of this study builds upon the quantitative survey. It comprises assessment of social-demographic data, aspects of general values and attitudes, routines, and behaviour patterns, data on investive consumption, such as personal and household amenities, and last but not least data as basis for the carbon calculator, i.e. everyday consumption. The data from this survey provides the data source for the proposed segmentation of value orientation patterns, for the carbon calculator, and the analysis of lifestyle-related consumption and behaviour patterns. Figure 4.5 outlines the research design with all the involved steps and components of the overall research process.

The following chapter will present the methodological and analytical steps of the above-mentioned research design in more detail. It will first summarise the aspects of the explorative phase. It will give an overview of the methodical and analytical approach with respect to the qualitative study, and it will then give a comprehensive description of the quantitative survey, its sampling process, data collection, processing, and analysis.

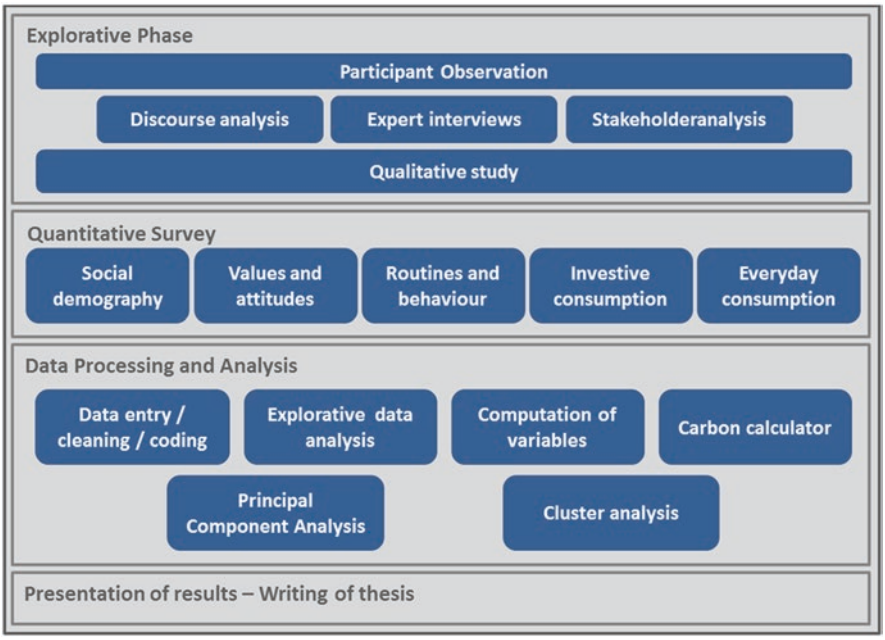

Fig. 4.5 Research design: outline of the research process. (Source: Own draft)

4.2.2 Preliminary Research and Gaining Access to the Field and Topic

A helpful source of foundational information and knowledge was gained through the project-related, rather explorative studies as part of the initial project phase between February 2009 and January 2010. To better understand the relevance of climate-related issues and climate change in the public discourse in India in general and in Hyderabad in particular, the team of researchers conducted expert interviews with administrative and technical staff, NGO officials, university teachers and professors, urban planners, and journalists (Kimmich et al. 2012; Reusswig et al. 2012). In order to better understand some of the root causes and also the cultural specificity of the public understanding and perception of climate change and sustainable development, a comprehensive media analysis was conducted on the topics of climate change, sustainability, and the impacts of extreme weather events, both in national English newspapers (1-year coverage of *The Hindu* and *The Times of India* (Reusswig et al. 2009)) and local Telugu-language newspapers (3-month coverage of the *Eenadu*, *Vaartha*, *Andhra Jyothy*[5] (Reusswig and Meyer-Ohlendorf 2012)).

[5] Because of the language barriers, the research, selection, and translation of articles were conducted by our partner Centre for Media Studies (CMS). I would like to thank CMS for their support.

Moreover, a methodologically informed stakeholder analysis with a focus on urban development and planning, sustainability, and climate change mitigation and adaptation gave the author useful insights into the urban governance structure of the city and helped him to gain expedient knowledge for some of the major project objectives: to initiate an effective stakeholder process and develop a participative perspective action plan for the future development of the city (Kimmich et al. 2012; Reusswig et al. 2012).

These research steps were accompanied by extensive field visits in Hyderabad, which allowed the author to realise a methodologically structured participant observation process. Photographic documentation and informal talks accompanied by taking field notes were the techniques applied in order to deepen understanding of and familiarisation with the research context.

4.2.3 Qualitative Study

Intertwined with the preliminary research outlined above, the most critical element of the preparations for the lifestyle survey was the qualitative study that was conducted between March and May 2010. It was meant *firstly* as an exploratory study that provides insights into the group-specific differentials of individual carbon footprints, their perception and knowledge of the local climate conditions and the concept of global climatic change, and their relation to strong climate signals (such as heat waves and strong rain events) (published in Reusswig and Meyer-Ohlendorf 2010). It *secondly* aimed as the foundational data source to build the standardised questionnaire for the representative survey that was conducted between September 2011 and April 2012. And *thirdly*, the qualitative study facilitated the interpretation of the results of the quantitative survey, especially with respect to the analysis of values and attitudes and the understanding of the cluster solution (see Sect. 4.2.5.2). The key thematic foci, objectives, tools, and aspects of this qualitative study are outlined in Table 4.7 below.

In total, 27 semi-structured interviews were conducted in this way, also containing a quantitative part addressing personal and household energy consumption and consumables, relevant in respect to GHG emissions. Additionally, social-demographic information such as household income, personal assets and consumer durables, migratory background, caste, religion, etc. was surveyed.

The respondents were selected through theoretical sampling (Flick 2006, pp. 125, 128; Strauss 1987, p. 39) based on the following aspects: respondents gender, age, income, education, and area's distance to the core city. The location aspects were included in the sampling in order to cover various localities and to understand location preferences of different social groups. The location analysis was done through GPS logging of the household and GPS-tagged photographic documentation of the

Table 4.7 Key aspects and foci, objectives, tools of the qualitative survey

Thematic focus	Key objectives	Additional supportive tools	Key aspects
1. Planned lifestyle segmentation	Understand the relevance of the lifestyle concept and the character of distinctive behaviour in the Indian urban context based on social position, value orientation, and conduct of life	Household location analysis (GPS logging, mapping: photographic documentation, observation protocol)	Value orientation (attitudes, world view, aims in life)
		Informal talks	Conduct of life (social practice, behavioural and consumption patterns, endowment)
		Participant observation	Social position
	Identify segmentation indicators for planned quantitative survey	Newspaper screening	
2. Social representation of climate change	Understand group specific perception of climate change	Informal talks participant observation newspaper screening	Perception of environmental pollution
			Energy-saving behaviour
			Perception of "weather changes" (cf. Reusswig and Meyer-Ohlendorf 2010)
			Reasoning of "weather changes"
			Knowledge and ideas of the concept of climate change, reasoning, emotional responses, perceived need for change
			Solutions with respect to climate change mitigation and adaptation
3. Climate affectedness	Understand differing levels of affectedness from climate related impacts		Affectedness from and coping with heat waves, strong rain events and flooding
4. Carbon footprinting	First assessment of group-specific carbon footprint		Household electricity use
			Inner-city mobility
			Long-distance mobility
			Cooking fuel
			Meat consumption
			Investive consumption/ consumer durables

area around the interviewed household.[6] Care was taken that a good coverage of the different locality types and different social-economic groups was achieved.

A translator was present during most of the interviews. The interviews were audio recorded and additionally recorded by hand in an interview protocol. The audio data was processed through verbal transcription by the researcher with the support of a professional transcriber. For the purpose of this study, the transcribed data was initially examined completely. In a second step, only the relevant material for this study was extracted for further analysis. The actual analysis was then carried out based on qualitative content analysis (Mayring 2002).

In sum, this data and information laid the groundwork for the development of the lifestyle survey that integrates the assessment of general values and attitudes, environment and climate perceptions, behavioural and consumption patterns, a carbon calculator, and a wide array of demographic characteristics. This comprehensiveness required a complete standardisation of the survey in order to reduce the length of the questionnaire and therefore not to overstress the commitment of respondents.

4.2.4 Quantitative Survey

The quantitative survey represents the core element of this study. The following sections will outline the methodological steps of data collection with the development of the survey instrument, training of enumerators, translation of the questionnaire, the sampling process, and the actual survey.

4.2.4.1 Data Collection: Questionnaire, Translation, Training of Field Assistants, and Pretest

As stated above, the construction of the questionnaire was mainly informed by previous explorative research, especially the qualitative study. To facilitate greater consistency between the involved research assistants, the questionnaire was prepared in a way that the interaction between interviewee and interviewer was mainly based on a prescribed structure. The main structure of the survey instrument was fourfold (Annex I): the *first* part of the survey contained a contact sheet, providing the interviewer with an introduction to the subject. This part also involved a short part for metadata collection about the respondent and a standardised observation protocol (to be conducted by the enumerator after the completed interview). The observation included locational characteristics with respect to the immediate neighbourhood, the house itself, and its interior appearance.

[6] In some cases it was not feasible, e.g. when the respondent was not willing to invite the interviewer to his home and the interview took place in the office or in a café.

The *second* part of the questionnaire addressed general value orientations (items based on Schwartz' Portrait Value Survey, PVQ) as well as more specific attitudes with regard to city development, religion, tradition, environment, climate change, lifestyle, and consumption. The *third* segment involved questions on energy use, food consumption, and transport for the carbon calculator as well as other behavioural and consumption characteristics such as mobility patterns, shopping, leisure, holidays, personal assets, and household characteristics. Last but not least, the survey closed with a fourth and closing segment addressing social-demographic information (e.g. education, employment, migratory background, expenditures, religion, caste, etc.).

One of the greatest challenges was the scope of the envisioned survey, covering the whole social spectrum of the city, i.e. all social classes. Therefore, the questionnaire was conceptualised for face-to-face interviews, as there are still high rates of analphabetism and as face-to-face interviews allow higher response rates. Moreover, due to the comprehensiveness of the instrument, filter questions were applied in order to keep a limit on the length of the questionnaire. After finalisation, the questionnaire was professionally translated to Telugu by a professional translator from Hyderabad.

4.2.4.2 Sampling

Access to social-demographic data disaggregated to the city level was very limited. This limitation also narrowed down the options for a precise sampling method. The most reliable source of data was available from the Greater Hyderabad Municipal Corporation (GHMC) 2009 assembly elections with numbers of electors for each ward, i.e. all citizens above 18 years old residing in the respective election ward. From this data, the number of voters for zones, circles, and wards was available. All 5 zones were considered in the overall sample selection, from which a random selection of 12 out of 18 circles was made (first-stage sampling) with overall 127 wards. In a second stage, 60 wards (number determined by researcher) were randomly selected, proportionate to the size of the population in each selected circle. From a total number of 605 interviews, the number of interviews per ward was determined proportionate to the ward population size. In a Google Maps-based GIS, start points for random route household selection were determined within each selected ward (for every three interviews one start point). The start point was selected by the author based on an easily distinguishable feature on the map such as a healthcare unit, a Kirana store, a pharmacy, or a school. The random route procedure instructs the field investigator to start a random route from the start point. The random route instruction says, e.g. "as you stand in front of the start point building, walk left, and take the first right, then take the second left and on this lane or street, approach the fifth house on the right". After finishing an interview or after taking an appointment for an interview, the field investigator starts with a new random route from the house that she/he has interviewed and carries on with this procedure until three interviews have been completed and then approaches the next start point in the

ward. To secure random selection on the household level, the birthday method was applied, i.e. selecting that person for an interview who is above 18 years old, who lives regularly in this household, and who had her/his birthday most recently.

This three-stage proportionate geographical cluster sampling approach allowed the researchers to cover the Greater Hyderabad Municipal Corporation area of approx. 650 km^2 by still concentrating only on a selected number of wards (60 out of 150) without compromising considerably on representativeness. The approach reduces survey costs and permits a spatial analysis with regard to, e.g. differences between urban and peri-urban areas.

4.2.5 Data Analysis

Based on the research design and the conception of lifestyle, the data from the survey was analysed as outlined in Fig. 4.6. This flowchart depicts the major components and methodological steps in a sequential order. It differentiates between manifest and latent variables. Manifest variables are those that were measured directly by means of the survey and that directly correspond with questionnaire items. Latent variables are those variables that are composed and built from a set of manifest variables through, e.g. factor analysis or cluster analysis.

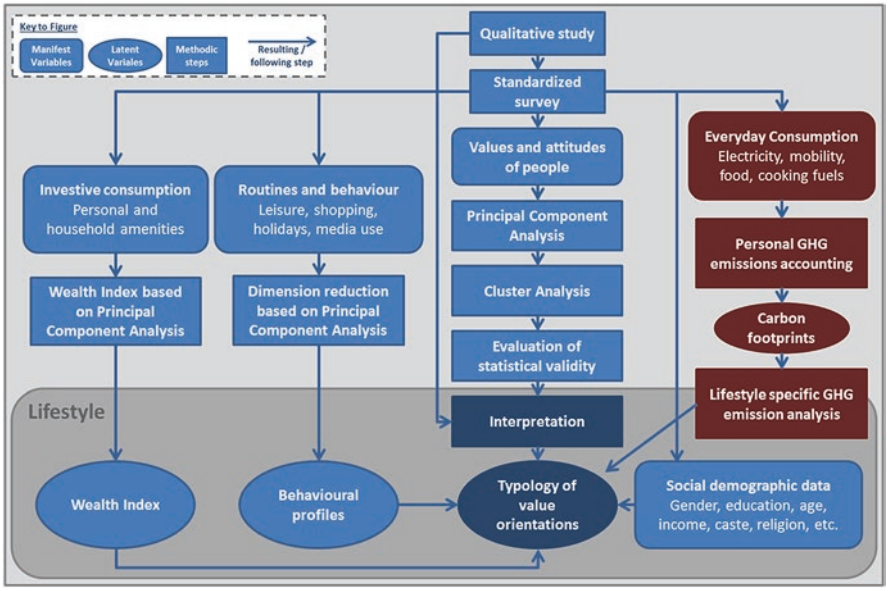

Fig. 4.6 Methodological and analytical steps for the lifestyle segmentation and lifestyle-specific GHG emission accounting. (Source: Own draft)

The analysis builds on four main strands: (1) the typology of value orientations; (2) a measurement of investive consumption based on personal and household amenities (wealth index); (3) profiles of behaviour and routines building on dimensions such as leisure, shopping, holidays, and media use; and (4) the personal carbon footprinting originating from everyday consumption. In addition to these four strands of analysis, that each condense a set of manifest variables into a single dimension, there are social-demographic data that remain in their original form as passive and manifest variables.

4.2.5.1 Building a Typology of Value Orientation Patterns: Cluster Analysis with Principal Component Analysis (PCA)

Principal Component Analysis (PCA)

A larger set of attitudinal items (51 statements measured with a 6-point Likert scale) were used to get hold of respondents' values and attitudes towards broader dimensions of everyday life. To structure this large set of variables in a content-specific way and to reduce them to a manageable number of dimensions, PCA was used, first as an explorative operation and secondly confirmatory run, controlling for the number of dimensions and included items. As suggested by Backhaus (2011, p. 378), the components were rotated with an orthogonal Varimax Rotation, i.e. the orthogonal factor axes do not correlate with each other.

In the initial explorative analysis, all 51 items were included. To decide upon and determine the number of dimensions to be extracted in the final solution, the scree plot was examined, which displays the eigenvalues associated with a component in descending order. The scree plot visualises those components or factors that explain most of the variability in the data. A steep downward curve up to a bend includes all those components that have considerably higher eigenvalues compared to those following the bend in a rather flat or horizontal line.

Moreover, based on the communality values, which indicate the proportion of variability of each variable explained by the factors, the included items were examined by how far they contribute to explaining variance within the overall solution. Items with low communality values below 0.4 and items that do not fit well into the extracted dimensions in terms of content were removed iteratively, until a suitable solution was arrived at. For the evaluation of the final factor solution, the measure of sampling adequacy (MSA) was applied, showing the Kaiser-Meyer-Olkin (KMO) measure and the Bartlett test of sphericity (Fromm and Baur 2008, p. 325).

After completing the formal tests, the most important step of analysis is the interpretation and labelling of each component or factor. This is done based on reading and understanding the coherence between high-loading items in each of the factors. In the case that the factor solution does not make sense in terms of content, the result needs to be dismissed. For the purpose of interpretation of and understanding the evolved patterns of orientation, the explorative phase of the project and the

qualitative survey were very critical. All dimensions, together with the underlying manifest variables, had to be put into a broader context.

The PCA was conducted to arrive at a manageable set of variables as basis for the cluster analysis. As preceding step to the cluster analysis, PCA allows the most important dimensions to be distinguished that are represented by the applied set of attitudinal items. A preceding PCA has great advantages compared to non-factorised clustering. It reduces a large number of variables to a minimum and provides for a centralised set of few uncorrelated, independent variables. For this analysis, five dimensions were identified, which were then used for the next step, the cluster analysis.

Cluster Analysis

Based on previous exploration of different algorithms, such as two-step cluster analysis, the author decided for a k-means clustering. In order to obtain start values for this centroid-based algorithm, a hierarchical cluster analysis (ward) was previously conducted. Without definite start values, which the k-means algorithm requires, random start values are computed. Therefore, the combination of both procedures makes sense here, because the k-means procedure builds on the ward method and improves and refines the results of the hierarchical algorithm. For both methods, the k-means and the ward method, the group memberships of ten clusters were computed. In order to determine a formally valid number of clusters, different statistical tests were conducted, the Eta^2, the PRE-value, and F-max (cf. Schendera 2010, p. 119). Based on these statistics, a final cluster solution was decided.

Based on Fromm (2010, p. 214) further criteria were considered: (a) examination of differentials of means of the underlying variables between the clusters and (b) an evaluation of the standard deviations of each variable within the cluster. Moreover, some authors suggest the computation of F-values, which measure the proportion between the cluster-specific variance and the variance of the overall sample for each of the underlying variables (Fromm 2010; Schendera 2010; Backhaus 2011). According to the statistical tests, a six-cluster solution was most suitable and with regard to its content well interpretable. The first level of interpretation was done through reading and comparing the cluster means of the underlying components.

In order to evaluate and compare the clusters with regard to the underlying distribution of factors, an analysis of variance is required. As this cluster solution produced more than two independent groups or samples, in which the factor values were not normally distributed, a one-way analysis of variance (ANOVA) is problematic. In this case, it was suggested to test the group-specific distribution of variables and validate the significance of difference through the non-parametric Kruskal-Wallis test (Bortz and Schuster 2010, p. 214; Field 2011, p. 559). The Kruskal-Wallis test is a non-parametric counterpart to the one-way independent ANOVA. It tests differences between several independent groups (Field 2011, p. 559). The test confirms significance in the case that the underlying variable differentiates at least between two of the involved clusters. The test proving significant

therefore gives confidence that the significant effect is genuine, but, just like a one-way ANOVA, it only tells that a difference exists; it does not tell exactly where the differences lie (Field 2011, p. 564). However, comparison of medians for each variable in each cluster allows for a quite reliable differentiation between the clusters (Annex II, see also in Andy Field (2011, p. 565), who suggests looking at boxplots for a more specified differentiation).

Besides formal criteria for the evaluation of the cluster quality, it is most important to find the clusters interpretable. This includes generating theoretically meaningful names for the value orientation patterns. Once the interpretation of the clusters based on the active variables is completed, the so-called passive variables are taken into account. The methodology behind this step of interpretation and description of clusters is explained in Sect. 4.2.5.6.

4.2.5.2 Carbon Calculator

The questionnaire items have been created based on availability of reliable emission factors (EF). The selection of EFs was carried out in close consultation with a direct project partner no2co2, a research institute which has developed the first India-specific web-based carbon footprint calculator. Many of the selected EFs have also been provided by no2co2 (Table 4.8). According to the author's research, the provided factors are the most accurate factors available for India, even though they should be used for indicative purposes only, have a finite degree of uncertainty, and are expected to vary with time (Gilani 2010, 2012).

4.2.5.3 Calculating Average Long-Term Emission Effects of Specific Consumption Practices

To arrive at an average value of GHG emissions associated with a specific consumption practice, there are different approaches available: first, with regard to the use of electronic items such as air-conditioning, washing machine, and television, it is useful to draw on available data of consumption averages of Indian-specific appliances. no2co2 has computed these consumption averages for a large number of appliances based on Wattage and estimations of average annual usage times. This data have been provided by no2co2 in personal correspondence. They can be shared on request.

The resulting value was then extrapolated to the individual annual mean based on the average number of appliances per household and adjusted to the mean household size. In this way, the author arrived at a per person emission value, that indicates the per capita average amounts of emissions associated with the use of a specific appliance.

Second, for all other domains of consumption, more specific data is available from this study. For the use of any technology or the adoption of a consumption practice, the author has summed the practice-specific emissions from all respondents

Table 4.8 Underlying emission factors (EF) and their sources

Activity	EF common name	Measurement	Weight EF	Units EF	Source EF/ comments
Private transportation	Two-wheeler	Duration of usage	0,65	kg CO2e/h	Direct correspondence with Vivek Gilani
	Four-wheeler	Duration of usage	4,20	Kg CO2e/h	Direct correspondence with Vivek Gilani
Public transportation	Tan AC	Time spent in taxi	4,66	Kg CO2e/h	Direct correspondence with Vivek Gilani
	Taxi-non-AC	Time spent in taxi	3,30	Kg CO2e/h	Gilani (2010)
	Auto-rickshaw	Time spent in auto-rickshaw	1,80	Kg CO2e/h	Gilani (2010)
	Local bus- AC	Time spent in local bus (AC)	0,40	Kg CO2e/pass./h	Gilani (2010)
	Local bus-non-AC	Time spent in local bus (non-AC)	0,20	Kg CO2e/pass./h	Gilani (2010)
	Shared auto-rickshaw	Time spent in shared auto-rickshaw	0,49	Kg CO2e/pass./h	Direct correspondence with Vivek Gilani; three-wheel auto-rickshaw two-stroke engine, divided by three passengers
	MMTS/local train	Time spent in local train	0,60	Kg CO2e/pass./h	Gilani (2010)
	Car sharing	Time spent in shared car	1,77	Kg CO2e/pass./h	Direct correspondence with Vivek Gilani; we assumed AC cars, petrol car, shared by three people
	Chartered office/school bus	Time spent in office school bus	0,22	Kg CO2e/pass./h	Direct correspondence with Vivek Gilani

(continued)

Table 4.8 (continued)

Activity	EF common name	Measurement	Weight EF	Units EF	Source EF/ comments
Lang distance travel	Train	Time spent in long distance train	0,70	Kg CO2e/pass./h	Gilani (2010); for long distance, i.e. longer than eight hours. 24 h are assumed
	AC bus	Tim; spent in AC Bus	0,60	Kg CO2e/pass./h	Gilani (2010)
	Int. air travel <4 h flight	Number of flights	304,00	Kg CO2e/pass./ flight	Gilani (2010)
	Int. air travel – 4 to 8 h flight	Number of flights	625,00	Kg CO2e/pass./ flight	Gilani (2010)
	Int. air travel > h flight	Number of flights	1070,00	Kg CO2e/pass./ flight	Gilani (2010)
	Dom. air travel <45 min flight	Number of flights	71,00	Kg CO2e/pass./ flight	Gilani (2010)
	Dom. air travel – 45 min to 1 h 15 min flight	Number of flights	100,00	Kg CO2e/pass./ flight	Gilani (2010)
	Dom. air travel >1 h 15 min flight	Number of flights	128,00	Kg CO2e/pass./ flight	Gilani (2010)
Food	Milk	Amount of milk consumed	0,83	Kg CO2e/1	Gilani (2012)
	Mutton	Amount of Mutton consumed	12,69	Kg CO2e/kg mutton	Gilani (2012)
	Chicken	Amount of chicken consumed	4,48	Kg CO2e/kg chicken	GEMIS (2010); frozen chicken, average international
	Beef	Amount of beef consumed	8,61	Kg CO2e/kg beef	Gilani (2012)
	Pork	Amount of pork consumed	5,53	Kg CO2e/kg pork	Gilani (2012)
	Rice	Amount of rice consumed	0,92	Kg CO2e/kg rice	Gilani (2012)

(continued)

Table 4.8 (continued)

Activity	EF common name	Measurement	Weight EF	Units EF	Source EF/ comments
Electricity and cooking	Electricity	Amount of electricity used	1,33	Kg CO2e/kWh	Brander et al. (2011)
	LPG – domestic	Number of cylinders used	44,50	Kg CO2e/cylinder	Gilani (2010)
	Kerosene	Litres used	2,46	Kg CO2e/l	Direct correspondence with Vivek Gilani
	Wood	Amount of firewood used	1,78	Kg CO2e/kg	Gilani (2012)

that follow the particular practice through their consumption. The mean of this total amount for each of the examined practices represents the annual personal mean of emissions associated with the respective consumption practice.

This calculation does not directly support the lifestyle analysis. It is a measure that seeks to highlight specific consumption effects of certain climate-relevant consumption practices based on average personal emissions. It represents an alternative explorative approach to estimate GHG emission effects of practices. In particular, it indicates the long-term impact of certain investive consumption decisions, such as the purchase of a car, motorbike, fridge, or air-conditioner.

4.2.5.4 Investive Consumption: The Wealth Index

The conceptualisation of investive consumption as one of the important pillars of the lifestyle concept is new and unique. However, the method to create the index is based on experiences from many studies, where it is used as an indicator for social-economic position (SEP) and in some cases as a proxy for income. A number of studies build the index as a basis of a set of subjectively selected wealth indicators (e.g. household amenities, personal assets, access to services) that are aggregated into a sum score with the aim to reflect household "wealth". Most studies, however, use more sophisticated approaches that weight the included variables. The simplest way is to limit the aggregation to a linear index by assigning equal weights which are summed up for each owned asset (for this method see, e.g. Razzaque et al. 1990) or by assigning weights based on a subjective relative rating of each owned asset (e.g. see Butsch 2011, p. 97). Both these approaches are appealing due to their simplicity and apparent objectivity. However, they have been criticised for the fact that the imposition of numeric equality is too arbitrary, since different assets are unlikely to have an equal effect on households' wealth (Filmer and Pritchett 2001, p. 116). This same critique is to be considered if assets are classified into pre-determined socio-economic categories and weighted accordingly, as suggested by Butsch (2011, p. 97).

Particularly in epidemiological research, a rather new approach is gaining broader acceptance as a measure to weight wealth indicator variables and aggregate these into a one-dimensional measure of SEP by means of principal component analysis (PCA). This method has now become an increasingly routine application (Vyas and Kumaranayake 2006, p. 460) that has been tested in various contexts, especially in low-income countries. The approach to build an asset-based index is rather simple and assessing the underlying amenities and assets through a household survey is straightforward (Annex I). The wealth index is a flexible tool, able to differentiate inequalities in social-economic status within a broad social spectrum based on assessing significant inequalities in durable consumption (Filmer and Pritchett 2001, p. 128; Vyas and Kumaranayake 2006, p. 467).

The procedure of building the asset-based index is mainly based on suggestions given in Filmer and Pritchett (2001), Vyas and Kumaranayake (2006), and Ruthstein and Johnson (2004). Table 4.9 lists all included indicator variables. The wealth index in this study includes binary variables (e.g. ownership of a flat screen TV; yes/no) as well as counted variables (e.g. number of air-conditions equivalised per number of household members). Counted variables have been included in cases with expected higher variance.[7] The framework of this study requires a specific differentiation both in the lower as well as in the higher social-economic segments. Therefore, the author did not aim for a simplified assessment of wealth, but was rather interested in a tool that is able to cover the whole social spectrum of the city and the inherent complexity of its overall social differentiation.

The author examined and explored in a few runs of the procedure different measurement levels. The best results in terms of coherence were achieved if the metric variables were not dichotomised and the involved additional information was thereby not removed. The inclusion of counted, metric variables is also done in other studies, such as in Filmer and Pritchett (2001, p. 117) as well as in Vyas and Kumaranayake (2006, p. 463).[8] Using metric variables is statistically not problematic, if all variables are z-standardised (Vyas and Kumaranayake 2006, p. 463). All included counted (metric) variables (Table 4.9) that measure the number of underlying assets were equivalised according to household size, i.e. the number of items in a household equivalised (adults = 1; children below 13 years = 0.5) to a per person level. The procedure of building the index is as follows:

- For the selection of relevant items, potential indicator variables were explored concerning mean, frequencies, and standard deviation (SD).
- The variables with low levels of SD were excluded.
- The missing values have been exchanged by the variables' overall mean.
- All raw data was then z-standardised in SPSS.
- The z-standardised variables then underwent PCA to compute the indicator weights to all included items (Filmer and Pritchett 2001, p. 116).

[7] Only selected indicators have been surveyed as counted items.

[8] In most cases, the variable number of rooms is included as metric variable together with dichotomous variables.

Table 4.9 Overview of included amenities building the wealth index and respective measurement levels

	Variable description	Dichotomous vs. metric measurement
Kitchen	Electric cooking range	Dichotomous
	LPG Stove	Dichotomous
	Kerosene stove	Dichotomous
	Chullaha	Dichotomous
	Fridges one-door	Metric
	Fridges two-door	Metric
Cooling/heating	Fan	Metric
	Air-cooler	Metric
	Air-condition	Metric
	Warm water geyser	Dichotomous
Washing machine	Semi-automatic washing machine	Dichotomous
	Full-automatic washing machine	Dichotomous
Mobility	Car	Metric
	Two-wheeler	Metric
	Cycle	Dichotomous
Media/telecommunication	Black-and-white TV	Dichotomous
	Colour TV	Dichotomous
	Flatscreen TV	Dichotomous
	Landline	Dichotomous
	Computer	Dichotomous
	Internet	Dichotomous
	Mobile phone	Dichotomous
Various assets	Mattress/cot	Dichotomous
	Pressure cooker	Dichotomous
	Mixer grinder	Dichotomous
	Credit card	Dichotomous
Servants	Part-time maid	Dichotomous
	Full-time maid	Dichotomous
	Cook	Dichotomous
Housing	Number of rooms	Metric
	Semi-pucca house type	Dichotomous
	Pucca house type	Dichotomous
Access to water	Own tap	Dichotomous
	Shared tap	Dichotomous

– The factor coefficient scores, i.e. the factor loadings of the first component, were then multiplied by the variables' z-standardised values for each respondent.
– The sum of these indicators' values represents the value of the wealth index. A standardised score, which differentiates each respondent based on their underlying asset structure.

The index therefore estimates the relative level of difference in terms of personal and household investments in durable goods and services. It indicates therefore the relative level of investive consumption.

4.2.5.5 Patterns of Consumption and Behaviour: Mobility, Shopping, Leisure, Holidays, and Media Usage

For the operationalisation of everyday conduct of life in the mentioned areas, mobility, shopping, leisure, holidays, and media use, a broader set of questionnaire items was developed based on the results of the qualitative survey. For the selection of variables, it was important to consider collinearity with the measurement of carbon emissions. This rule came without any problems concerning shopping, leisure, holidays, and media use, but it was an issue with regard to mobility. Mobility-related emissions are directly measured and calculated based on the time spent on transportation of a particular mode, e.g. on a person's own four-wheeler. The same approach for measuring, e.g. the preferred mode of transport was most evident concerning the adoption of everyday practices of mobility. In spite of this problem of collinearity, the author was not aware of any other choice than measuring respondents' most dominant mode of transport. And in fact, by looking at the dominant mode of transport, it is not the summed carbon emissions from all used modes, but it is the most preferred mode of transport that is taken into account. It depends both on the financial means and availability (e.g. motorised vehicles) as well as on lifestyle-related preferences and behaviour patterns.

For this purpose, mobility data was analysed concerning the time spent using different modes. The results were then classified through analysis of the frequencies distributed across different classifications. The author then decided on a classification with four broader categories, (a) walking and cycling, (b) public transport, (c) two-wheeler, and (d) four-wheeler. The summed values of time spent on different modes of transport within each of these categories were taken as the basis for determining the dominant mode of transport for each of the respondents.

For the other realms of conduct of life, the author decided to conduct a PCA under consideration of the methodological aspects, explained above in Sect. 4.2.5.2. First, an explorative PCA allowed the author to decide on the number of components extracted (scree plot) and the items to be included (communalities and content-wise interpretational criteria). In the second, confirmatory round of PCA, two components were extracted, respectively, for the four areas of conduct of life: *first*, the use of media for information gathering; *second*, preferences and patterns of usage of shopping facilities; *third*, practices and preferences of leisure activities;

and last but not least, practices of vacation and holiday. All PCA have been examined in terms of the Bartlett test of sphericity, the KMO measure, and total explained variance in order to check quality and validity of the results.

4.2.5.6 Description and Analysis of Clusters with Passive Variables

The above-delineated procedures give an overview of the methodological steps associated with constructing the foundational aspects of lifestyle and of the personal carbon footprints, which are to be explained through the concept of lifestyle. These four blocks of analysis led to the output of latent variables that represent the building blocks of this study. Additionally, there are subsidiary variables within the theme of social demography. These variables were prepared and in some instances recoded but represent manifest variables, such as caste, income, religion, and employment. All variables that have not been included in the construction of the value orientation clusters (Sect. 4.2.5.2) are treated as passive variables. Passive variables are taken into account for the further analysis and interpretation of the value orientation clusters and for the construction of the lifestyle typology. For this purpose, the single clusters were analysed concerning the distribution of all passive variables across clusters.