

### 3 Specification of Research Design

Based on the previous work, the present chapter specifies the research design chosen and clarifies the partitioning of the detailed research question into subordinated research questions to be answered within three empirical studies.

To answer the detailed research question proposed in the previous chapter, a research design is chosen which exhibits an exploratory character. Exploration is appropriate in settings where the focus is on a rather new phenomenon.<sup>89</sup> For the present research, the rather new phenomenon appears to be the interplay of the four key concepts depicted by the theoretical framework in figure 7. The task is to explore this interplay and derive implications for research into customer co-design and the managerial practice of mass customization. Further, it was decided to employ mixed methods in the research design considering qualitative and quantitative procedures to explore the interplay. This decision reflects the reviewed literature in mass customization, where both procedures have been repeatedly reported.<sup>90</sup> It is frequently argued that mixed methods may increase the reliability of findings, as they build upon multiple data-gathering techniques as well as modes of data analysis to understand the phenomenon. Further, mixed methods are the appropriate choice for researchers who intend to derive their *“knowledge claims on pragmatic grounds”*.<sup>91</sup>

Based on that previous decisions, the sequential exploratory research design employing mixed methods proposed by Creswell (2003) was chosen.<sup>92</sup>

*“At the most basic level, the purpose of this strategy is to use quantitative data and results to assist in the interpretation of qualitative findings.”*<sup>93</sup>

The major characteristic of this research design is its sequential two-phase approach. In the first phase, qualitative data are gathered and analyzed. In the second phase, quantitative data collection and analysis takes place.

*“Its two-phase approach makes it easy to implement and straightforward do describe and report.”*<sup>94</sup>

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<sup>89</sup> Creswell (2008, p. 215)

<sup>90</sup> See Fogliatto et al. (2012, p. 16) for a recent literature review on mass customization and the main methods applied in this domain.

<sup>91</sup> Creswell (2008, p. 18)

<sup>92</sup> Creswell (2008, p. 213)

<sup>93</sup> Creswell (2008, p. 215)

Finally, an interpretation of the entire analysis across the two phases is conducted. Figure 8 depicts the chosen research design embedded into the overall structure of this thesis, which is outlined in the introduction.<sup>95</sup>

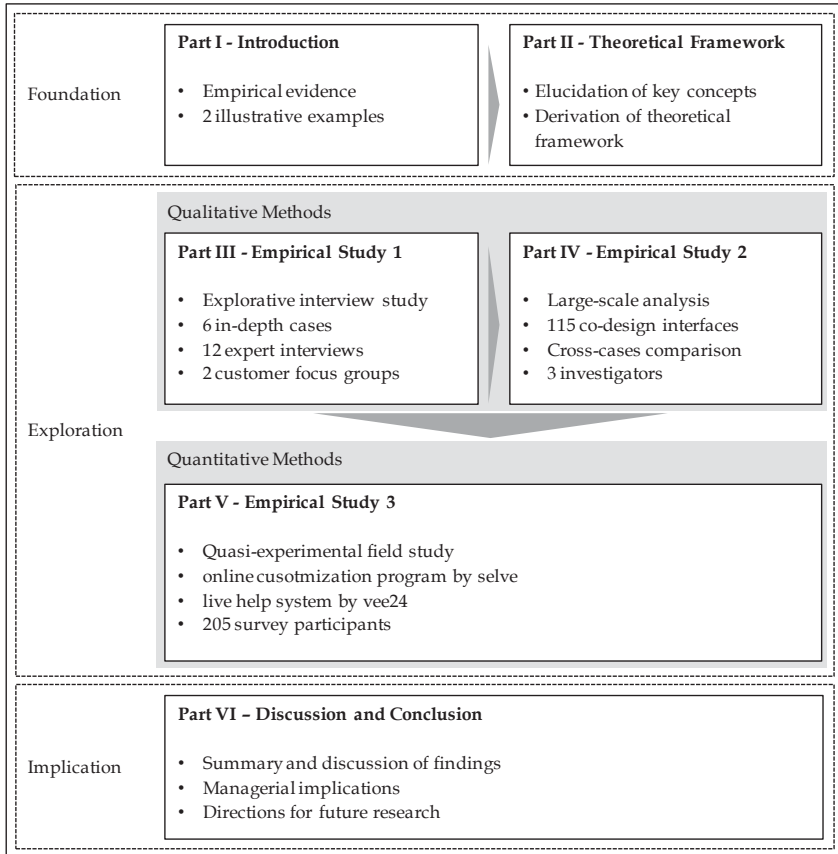


Figure 8: Sequential exploratory research design employing mixed methods<sup>96</sup>

<sup>94</sup> Creswell (2008, p. 216)

<sup>95</sup> Within dissertation theses it is common to differentiate between structure and design. The structure of the thesis depicts the hierarchical order of the singular parts or chapters. The research design in contrast depicts the logical sequence of research steps and their dependencies. Also see Töpfer (2010, p. 33).

<sup>96</sup> Own illustration

*Part I* in combination with *part II* comprises the motivational and theoretical foundation of this work. The following exploration exhibits the main body of the present thesis and comprises the sequential exploratory research design with its two-phase approach employing mixed methods. Phase one exhibits the qualitative methods reported in *part III* with empirical study 1 and *part IV* with empirical study 2. Phase two exhibits the quantitative methods reported in *part V* with empirical study 3. Finally, the entire findings are interpreted and discussed across the three studies in *part VI* to derive implications for research and practice.

Hence the exploration of the phenomenon under study is partitioned into three empirical studies. Empirical studies 1, 2 and 3 each answer subordinated research questions which are introduced below. Empirical study 1 in *part III* answers the subordinated research question:

*What are the key challenges for achieving high perceived value for customers when applying digital media to co-design processes?*

The first study employs the theory of social presence to explain the differences between in-store and online customer co-design. Six in-depth case studies are conducted which are based on 12 expert interviews and two customer focus groups. The cross-case analysis reveals three key challenges. Empirical study 2 in *part IV* then focuses on the following subordinated research questions:

*RQ1: What mechanisms of interactive media facilitate positive reinforcement through human interaction in online customer co-design?*  
*RQ2: What are the dominant approaches for facilitating positive reinforcement through online media in customer co-design?*

To answer these aforementioned questions, study 2 employs the theory of media richness. It builds upon a large-scale cross-case analysis of 115 online mass customizers with multiple investigators to explore processes of online customer co-design. Based on the insights of the previous qualitative explorations, i.e. *part III* and *part IV*, empirical study 3 then answers the following subordinated research questions:

*RQ1: What are the antecedents and consequences of the co-design value perceived by customers when using an online customization system?*  
*RQ2: How does live help and an increased social presence impact the value perceived by customers when using online customization systems?*

To answer these questions, a quasi-experimental field study is conducted. It employs the theory of social presence and investigates its impact on an online co-

design process. This study is conducted with two partners from practice, the shoe customizer *selve* and the live help provider *Vee24*. More than 200 customers participated and provided their feedback via an online survey. The collected data is then analyzed through structural equation modeling (SEM) and the method of partial least squares (PLS).

Finally, *part VI* delivers an interpretation of the entire analysis to round up the present thesis. It summarizes each empirical study, discusses their contributions across the findings, derives managerial implications and finally provides directions for future research. Before beginning with *part III* it needs to be noted here that all three empirical studies are preceded by a structured abstract which provides a short one-page overview of every chapter in the subsequent study.