

Abstract

Poverty, and associated undesirability, distinguishes a population as Base of the (economic) Pyramid (BoP). Lack of necessities and vulnerability negatively affect the well-being of BoP populations. Literature reveals intervention's failures in positively affecting the undesirability at BoP. Design intends to change current (undesirable) situation to desired situation. Failures of interventions refer to failure of design. Design for BoP targets BoP population as intended beneficiary and/or as intended stakeholders. Normative approach to understand the scope of design for BoP is a crucial contribution of this thesis. To formulate the scope of undesirability linked with BoP this thesis uses normative framework like Capability Approach by Amartya Sen. Normative frameworks evaluate prevalent conceptions of development and well-being, and related expected outcomes; which in turn affects the scope of enabling and goal oriented activities like design. This thesis uses the basis of prevalent design research and practice, while heavily drawing from interdisciplinary domains like developmental economics, social science and management.

The initial broad objective of this thesis is to support designers in designing successful products for and/or at BoP. As stated earlier, the starting point was the normative understanding of poverty and development. The outcome was structured analysis of normative approaches to conceptualize measure and eradicate poverty. To translate these insights to design, these approaches were linked with phases (like conceptual design, embodiment design etc.), thinking modes (analysis, synthesis etc.) and dimensions (process, designer and task) of design. This, along with the review of prevalent design for BoP literature, resulted into product success determinants and formulation design scope sufficient for BoP. Evaluation of prevalent design approaches and supports like Human centered design, participatory design etc. revealed that, 1) prevalent design scope is product centric and insufficient for BoP, and 2) Current supports are insufficient in achieving the proposed design scope. Survey involving experienced designers from BoP domain validated both literature-based conclusions. Literature and survey also concluded that needs analysis and simulation of stakeholder's behavioral responses are the two phases where design support is necessary, for which this thesis proposed a design framework. A case study of biomass cook stove tested and explained the framework. This case study also validated the relation between product success determinants and desired outcomes. Researcher designed a mould for rapid dissemination of cook stove and disseminated close to 250 cook stoves. Evaluation

of dissemination of cook stove, in three different contexts with three different modes of dissemination, using the proposed framework formed a crucial contribution of this dissertation. The framework's applicability and usability was tested using design experiments involving experienced designers. The subjects endorsed that the framework provides them structured inputs about the type and amount of data to be collected, and processing of the data that leads to specifications. All subjects endorsed the applicability and usability of the framework for simulating the behavioral responses towards an intervention, which is largely missing in current design methods for BoP.