

Customer Co-Creation in Early-Stage Social Ventures

Prof. Sophie Bacq

Associate Professor, Vrije Universiteit Amsterdam, Netherlands

Abstract

Early-stage social ventures operate under a dual form of uncertainty. They must determine whether a proposed product or service solves a meaningful customer problem while simultaneously ensuring that emerging commercial choices remain consistent with the intended social mission. Customer co-creation can reduce this uncertainty by involving customers, users, and, where appropriate, beneficiaries in idea generation, prototype evaluation, service adaptation, testing, and learning. However, participation does not automatically produce superior social innovation. Customer preferences may be heterogeneous, commercially attractive users may not represent the intended beneficiaries, and unrestricted adaptation can gradually weaken mission alignment.

This study develops a Customer Co-Creation Maturity Framework for Early-Stage Social Ventures (CCMF-SV) integrating six dimensions: customer-problem proximity, participation depth, feedback diversity, rapid learning integration, mission-alignment governance, and feedback closure. Because no real social-venture customer, prototype-testing, or commercialization dataset was supplied, the study adopts an explicitly simulation-based explanatory design. Five synthetic co-creation maturity conditions ranging from 20% to 100% were evaluated. Customer-validated concepts increase from 26% to 78% across the modeled scenarios, while concepts rejected after structured learning decline from 30% to 5%. Simulated customer-problem understanding increases from 42% to 91%, feedback-to-prototype conversion from 29% to 87%, and early adoption intention from 38% to 82%, while median learning-cycle duration falls from 21 to 7 days.

The analysis suggests that effective customer co-creation is neither customer-led design without strategic boundaries nor conventional market research with limited customer agency. Instead, it is a governed learning architecture through which social ventures integrate experiential customer knowledge while protecting beneficiary interests and mission integrity. The framework contributes to co-creation and social-entrepreneurship research by positioning customer participation as a pre-scaling capability for reducing problem–solution uncertainty. All numerical results are simulated and should not be interpreted as empirical estimates of actual social ventures.

Keywords: customer co-creation, social ventures, social entrepreneurship, value co-creation, customer participation, social innovation, early-stage ventures, prototype validation



1. Introduction

Early-stage social ventures attempt to develop economically sustainable responses to social or environmental problems while operating with limited resources, incomplete information, and uncertain demand. Social entrepreneurship differs from conventional entrepreneurship partly because social-value creation occupies a central position in the opportunity and organizational logic, although ventures must still mobilize resources and develop economically viable operating mechanisms. Mair and Martí describe social entrepreneurship as a process addressing important social needs and catalyzing social change, while Austin, Stevenson, and Wei-Skillern identify both similarities and important differences between commercial and social entrepreneurial processes. These characteristics create a particularly demanding early-stage design problem: the venture must learn what users actually value without allowing immediate market preferences to become the sole criterion by which the social intervention is shaped.

Customer co-creation offers one route through this uncertainty. Co-creation research challenges the assumption that value is generated exclusively inside the organization and subsequently delivered to passive customers. Prahalad and Ramaswamy positioned interaction between firms and consumers as an important locus of value creation, while Vargo and Lusch's service-dominant logic similarly shifted attention toward value emerging through service and resource integration rather than being embedded entirely within producer-created outputs. For an early-stage venture, this implies that customers can contribute more than purchasing decisions. They can provide contextual knowledge, articulate unmet needs, challenge design assumptions, test prototypes, identify usability barriers, and participate in the refinement of an emerging value proposition.

Customer involvement is especially consequential before a venture has committed substantial resources to scaling. Hoyer and colleagues conceptualized consumer co-creation across several stages of new-product development and emphasized both its potential outcomes and the conditions that can facilitate or inhibit participation. Nambisan and Baron likewise examined voluntary participation in virtual customer environments, demonstrating that firms can organize environments through which customers contribute to innovation and value-creation activities. In early-stage social ventures, such participation may enable inexpensive learning before a business model, distribution system, or service protocol becomes organizationally difficult to change.

Yet social ventures introduce a complication that mainstream co-creation frameworks do not always foreground. The customer, user, payer, and social beneficiary may be the same person, but they may also be different stakeholders. Social enterprises frequently operate hybrid business models in which commercial and social objectives coexist, producing recurring tensions concerning whom the organization serves, how value is created, and how economic activity supports social purpose. Santos, Pache, and Birkholz show that social-enterprise business models differ according to the relationship among commercial customers and beneficiaries, while Smith, Gonin, and Besharov demonstrate that social-business tensions are persistent organizational conditions rather than temporary managerial anomalies. Consequently, customer co-creation can improve market relevance while simultaneously creating mission risk when the preferences of paying or easily reachable customers are allowed to displace the needs of less powerful beneficiaries.

This paper therefore conceptualizes Customer Co-Creation in Early-Stage Social Ventures as a governed entrepreneurial learning process. The research gap lies between general co-creation literature, which provides strong explanations for customer participation in product and service development, and social-entrepreneurship literature, which emphasizes social-value creation, hybridity, accountability, and mission tension. Co-creation research has also highlighted the need to examine outcomes rather than participation alone; Voorberg, Bekkers, and Tummers' systematic review of co-creation and co-production found that much research emphasized influential conditions while outcomes remained comparatively underexamined.

2. Objectives of the Study

2.1 To Conceptualize Customer Co-Creation as Structured Entrepreneurial Learning

The first objective is to distinguish genuine customer co-creation from conventional feedback collection. Customer surveys and post-use satisfaction ratings can provide valuable information, but they generally preserve relatively clear boundaries between the organization as designer and the customer as respondent. Co-creation involves deeper customer participation in activities through which offerings are generated, modified, interpreted, or used. Hoyer and colleagues' framework explicitly addresses varying degrees of consumer participation throughout new-product development rather than treating all customer information as equivalent.

For early-stage social ventures, co-creation is conceptualized here as a sequence of learning exchanges in which customers contribute experiential resources and the venture converts those resources into testable design changes. The purpose is not to implement every suggestion. Instead, the venture repeatedly tests assumptions concerning the problem, proposed solution, usability, accessibility, willingness to adopt, delivery mechanism, and intended social outcome.

A structured approach also requires explicit feedback closure. Participants should be able to understand how their input affected subsequent design choices, particularly when social ventures depend on trust and continued community participation. Co-creation therefore becomes a relationship between participation and organizational learning rather than an episodic consultation exercise.

2.2 To Integrate Customer Learning With Social-Mission Governance

The second objective is to develop a mechanism for preserving social purpose during customer-led learning. Santos describes social entrepreneurship through the pursuit of sustainable solutions to neglected problems characterized by positive externalities, emphasizing value creation rather than unrestricted value capture. Social ventures therefore cannot evaluate every product modification solely through predicted revenue or customer satisfaction.

A customer request may increase commercial attractiveness but reduce affordability for the intended beneficiary population. Conversely, a socially valuable feature may remain important even when early paying customers attach limited immediate value to it. Social ventures consequently need explicit criteria for distinguishing negotiable service characteristics from mission-critical attributes.

The proposed framework addresses this problem through a mission-alignment governance dimension. Customer insights are treated as evidence that informs venture decisions rather than commands that automatically determine them. This preserves meaningful participation while



acknowledging the venture's responsibility to evaluate ethical, social-impact, accessibility, and financial consequences simultaneously.

2.3 To Evaluate Simulated Co-Creation and Early Venture Outcomes

The third objective is to examine whether increasingly mature customer co-creation could theoretically improve early venture learning. The analysis evaluates customer-problem understanding, feedback incorporation, early adoption intention, mission-aligned design retention, concept validation, and learning-cycle duration.

The framework deliberately measures both positive validation and intelligent rejection. An early-stage venture benefits not only when customers confirm an idea but also when co-creation reveals that a concept should be modified or abandoned before scarce resources are committed. Hoyer and colleagues identify both firm- and consumer-related outcomes of co-creation, supporting a broader interpretation of value than simple acceptance rates.

Accordingly, the simulated analysis treats the early rejection of poorly aligned concepts as a productive learning outcome rather than a failure. The purpose of co-creation is to improve decision quality under uncertainty, not to maximize the percentage of original founder ideas that survive unchanged.

3. Review of Literature

3.1 Value Co-Creation and Customer Participation in Innovation

Prahalad and Ramaswamy's work marked an important shift in value-creation thinking by emphasizing interactive co-creation experiences between firms and consumers. Rather than locating value creation exclusively within firm-controlled production, their perspective treated interaction as increasingly central to how value emerges. Vargo and Lusch's service-dominant logic similarly proposed a shift from a goods-centered logic toward one in which service, exchange, and customer resource integration occupy a more central analytical position.

Payne, Storbacka, and Frow subsequently developed a process-oriented framework for managing value co-creation, emphasizing interacting customer and supplier processes rather than treating co-creation as an isolated transaction. This process perspective is useful for early-stage ventures because customer involvement is rarely valuable as a single event. Entrepreneurs progressively acquire information as prototypes change, customers develop experience with the offering, and previously hidden requirements become visible.

Hoyer and colleagues extended the discussion into new-product development by examining the degree of consumer co-creation, its stimulators and impediments, and the consequences of customer involvement across development stages. Their framework supports the argument that participation can occur during ideation, development, testing, and commercialization rather than being restricted to post-development evaluation.

Nambisan and Baron further examined why customers voluntarily participate in virtual co-creation environments, while Nambisan's work on organizing such environments distinguishes different forms of customer contribution. These studies are relevant even to resource-constrained social ventures because co-creation does not necessarily require expensive research infrastructure. Small in-person



groups, messaging communities, pilot-service users, community meetings, prototype demonstrations, and digital feedback environments can all support structured learning when participation is appropriately designed.

Jaakkola and Alexander broaden the perspective by showing that customer engagement behavior can introduce diverse customer resources into service systems and influence value creation for multiple stakeholders. This is particularly important for social ventures, where customer knowledge may influence not only the focal offering but also community adoption, stakeholder legitimacy, and the behavior of other users.

3.2 Social Ventures, Hybrid Value Creation, and Beneficiary Voice

Social entrepreneurship research establishes that social ventures differ from conventional commercial ventures because social value is central to organizational purpose. Mair and Martí characterize the phenomenon as a process that addresses social needs and catalyzes social change, while Austin and colleagues identify mission, resource mobilization, opportunity, and performance-measurement differences between social and commercial entrepreneurship. This difference affects the interpretation of customer co-creation because market demand is not always a complete representation of social need. Santos' positive theory emphasizes the role of social entrepreneurship in developing sustainable solutions to neglected problems and highlights the distinctive relationship between social-value creation and economic-value capture.

Hybrid social-enterprise research adds further complexity. Smith, Gonin, and Besharov document persistent tensions between social and business demands, while Santos, Pache, and Birkholz show that social-enterprise models differ in how social and commercial activities, customers, and beneficiaries are connected. A social venture selling directly to beneficiaries therefore faces a different co-creation architecture from one in which donors, governments, employers, or higher-income customers finance services consumed by another group.

Customer co-creation should consequently begin with stakeholder-role clarity. The venture needs to identify whether the person providing feedback is a purchaser, user, beneficiary, influencer, gatekeeper, or some combination of these roles. Input from each role may be legitimate while answering a different design question.

3.3 Early-Stage Learning, Co-Creation Boundaries, and Venture Adaptation

Early ventures face uncertainty concerning both the problem they intend to solve and the organizational model through which the solution can be sustained. Customer co-creation can reduce this uncertainty, but deeper participation can also impose coordination costs. Hoyer and colleagues explicitly identify both stimulators and impediments to consumer co-creation, showing that participation is not costless or automatically productive.

Participation quality depends partly on the diversity and relevance of the customers involved. Repeated interaction with a narrow group of enthusiastic early adopters can create detailed feedback while still producing biased conclusions about the wider population. Social ventures face an additional representational risk when customers easiest to recruit are not those experiencing the greatest social disadvantage.



The venture therefore requires feedback diversity, not merely feedback volume. Differences in income, accessibility needs, geography, usage intensity, digital capability, gender, age, or other contextually relevant dimensions may alter how an intervention is experienced. The particular categories should be defined by the social problem rather than applied mechanically.

Customer contribution also needs to be translated into organizational decisions. Jaakkola and Alexander show that customer engagement can modify offerings and influence wider stakeholders through diverse resource contributions. The managerial challenge is to convert heterogeneous contributions into hypotheses, prototype changes, and testable priorities without creating design instability.

Finally, customer co-creation requires boundaries. Social-business tensions identified by Smith and colleagues mean that the venture may encounter customer requests that improve convenience or commercial appeal but weaken affordability, inclusion, environmental standards, or another mission commitment. The central capability is therefore responsive but bounded adaptation: the venture should be willing to change its solution while remaining explicit about the social outcomes it is unwilling to compromise.

4. Research Methodology

4.1 Research Design and Synthetic Analytical Architecture

The study adopts a simulation-based quantitative explanatory design because no actual social-venture customer interviews, survey responses, prototype tests, purchasing records, pilot-service logs, or impact measurements were supplied. No numerical value reported in the analysis represents a real customer, beneficiary, founder, or venture.

Five synthetic customer co-creation maturity scenarios were constructed at 20%, 40%, 60%, 80%, and 100%. The lowest condition represents founder-dominated development with occasional customer feedback and weak feedback closure. Intermediate scenarios progressively introduce structured customer discovery, diversified participation, repeated prototyping, explicit feedback analysis, and mission-alignment review. The mature condition represents an integrated co-creation system but intentionally retains disagreement, concept revision, and unsuccessful ideas.

For concept-level analysis, each maturity condition contains 100 synthetic early-stage concepts or major concept iterations, creating a conceptual frame of 500 observations. Each concept is classified after co-creation as customer validated, requiring substantial revision, or rejected following learning. The simulation uses descriptive comparisons rather than inferential significance testing. Statistical significance based on author-generated values would imply empirical evidence that the study does not possess. Future validation should collect repeated observations from actual early-stage social ventures and examine customer co-creation longitudinally from problem discovery through prototype testing and initial market entry.

4.2 Customer Co-Creation Maturity Framework for Social Ventures

Customer-problem proximity, learning integration, and mission governance receive relatively high weights because participation has limited value when the venture is interacting with irrelevant

participants, failing to translate learning into action, or allowing short-term preferences to undermine its social objective.

Table 1: Operationalization of the Customer Co-Creation Framework

Dimension	Weight	Operational Meaning	Illustrative Early-Stage Practice
Customer-Problem Proximity	0.20	Degree to which participants possess direct experience of the problem being addressed	Interviews with actual users, observation of current coping practices, pilot participation
Participation Depth	0.15	Extent to which customers move beyond providing opinions and participate in design or testing	Co-design workshops, prototype modification, comparative testing
Feedback Diversity	0.15	Representation of materially different customer and beneficiary experiences	Inclusion of underserved users, varying usage contexts, different access conditions
Learning Integration	0.20	Speed and rigor with which customer evidence produces testable design decisions	Feedback synthesis, hypothesis revision, prototype changes, experiment logs
Mission-Alignment Governance	0.20	Assessment of proposed changes against social-purpose and ethical boundaries	Affordability check, beneficiary-impact review, accessibility safeguards
Feedback Closure	0.10	Degree to which participants understand how their contribution was considered	Follow-up communication, prototype return sessions, decision explanation

The framework treats customer participation as a means rather than an end. A venture should not receive a high maturity score merely because many people attend workshops. Participation must generate decision-relevant learning and must involve people sufficiently close to the problem being addressed.

Mission-alignment governance is deliberately embedded inside the co-creation construct rather than added as an external ethics check. This reflects the hybrid nature of social enterprises described in social-entrepreneurship research. The venture must evaluate customer learning and social-purpose consequences together.

4.3 Outcome Measures and Simulation Procedure

Six principal outcomes were modeled. Customer-Problem Understanding represents the degree to which the venture's major assumptions concerning customer needs are supported by direct evidence. Feedback-to-Prototype Conversion measures the proportion of material customer insights converted into a concrete experiment or design change.



Early Adoption Intention represents synthetic willingness among target users to try or continue using the emerging solution. It is not a forecast of actual purchasing behavior. Mission-Aligned Design Retention represents the proportion of major design decisions judged consistent with the venture's predefined social-purpose criteria after customer-driven modifications.

Learning-Cycle Duration measures the number of days between gathering material customer evidence and evaluating a revised prototype or service concept. Finally, Concept Outcome classifies each synthetic concept as validated, requiring revision, or rejected after learning.

The simulation intentionally allows rejection rates to decline as maturity increases because stronger customer proximity improves the quality of initial problem framing. However, the rejection rate never reaches zero. Mature entrepreneurial learning should continue to eliminate weak ideas rather than becoming a mechanism for confirming founder preferences.

5. Analysis

5.1 Customer Understanding and Prototype Learning

Simulated customer-problem understanding rises from 42% in the lowest-maturity condition to 91% in the mature co-creation system. The increase represents a transition from founder assumptions toward repeated evidence from actual problem contexts.

Feedback-to-prototype conversion increases even more strongly, from 29% to 87%. This indicator distinguishes organizations that listen from organizations that learn. A venture can accumulate substantial customer commentary while making few meaningful changes. Mature co-creation requires an explicit mechanism connecting an observed customer difficulty to a design hypothesis and then to a revised product, service, or delivery experiment.

The distinction is consistent with co-creation literature emphasizing active consumer contributions within innovation rather than passive information provision. Hoyer and colleagues discuss co-creation across the new-product-development process, and Jaakkola and Alexander emphasize the resource contributions through which customer engagement can modify offerings and wider service systems.

Table 2: Simulated Outcomes Across Customer Co-Creation Maturity Levels

Co-Creation Maturity	Customer-Problem Understanding	Feedback-to-Prototype Conversion	Early Adoption Intention	Mission-Aligned Design Retention	Median Learning-Cycle Duration	Customer-Validated Concepts
20%	42%	29%	38%	68%	21 days	26%
40%	55%	43%	49%	73%	17 days	38%
60%	69%	59%	61%	79%	13 days	52%
80%	82%	74%	72%	85%	10 days	66%
100%	91%	87%	82%	91%	7 days	78%



5.2 Adoption Learning and Mission Alignment

Early adoption intention increases from 38% to 82% across the five scenarios. The modeled improvement arises because higher-maturity ventures repeatedly expose their assumptions to customer evidence before expanding. This should not be interpreted as a claim that co-created products universally achieve an 82% adoption level in real markets.

Mission-aligned design retention also increases, from 68% to 91%. This result is important because the framework does not conceptualize deeper customer participation as a threat to mission by default. Rather, a mature governance architecture can improve both customer relevance and mission consistency by making social-purpose criteria explicit during experimentation.

Social-enterprise research demonstrates why such governance matters. Santos, Pache, and Birkholz show that hybrid business models must align organizational design with the relationship between social and commercial activities, while Smith and colleagues emphasize persistent tensions between competing social and business demands. Customer evidence therefore becomes one input in a multidimensional decision rather than the sole decision criterion.

Median learning-cycle duration declines from 21 days to 7 days. The improvement represents greater organizational discipline in collecting, synthesizing, prioritizing, implementing, and retesting customer evidence. It does not imply that complex social interventions should always be modified quickly. Ethical, clinical, regulatory, safeguarding, or community-level interventions may appropriately require longer evaluation.

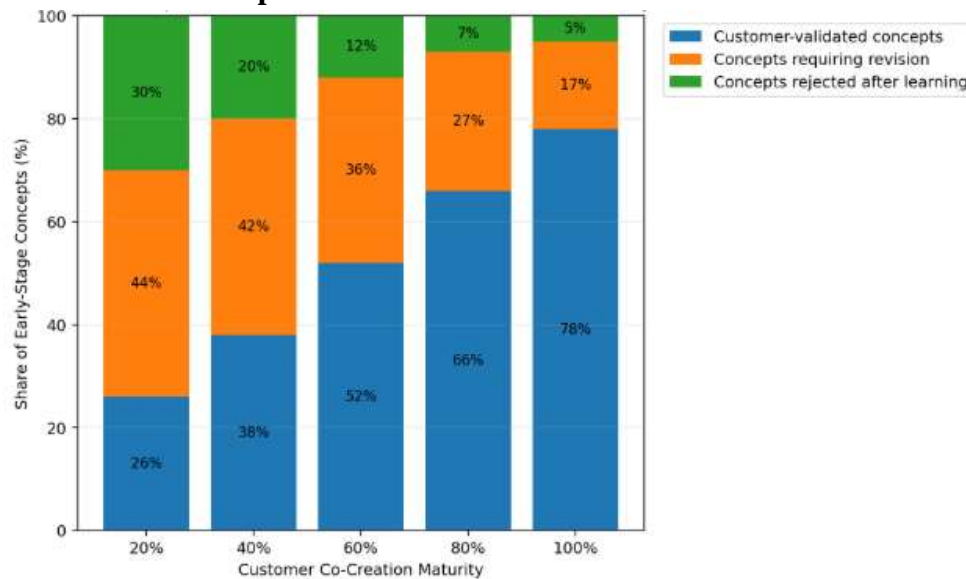
5.3 Concept Selection and Productive Rejection

The composition of concept outcomes changes substantially across maturity conditions. In the 20% scenario, only 26% of concepts are customer validated, 44% require major revision, and 30% are rejected after structured learning. At 100% maturity, 78% are validated, 17% require major revision, and 5% are rejected.

The decline in rejection should be interpreted carefully. It does not mean that mature ventures become less willing to abandon weak ideas. Higher maturity is assumed to improve initial problem framing through earlier customer proximity, meaning fewer inappropriate concepts enter advanced testing in the first place.

Concept revision remains present at every level. This is theoretically desirable because co-creation should generate change rather than merely certify what founders already intended to build. Mature customer participation is therefore associated with a greater probability that concepts reach testing in a relevant form while preserving a mechanism for modification and rejection.

Graph 1: Simulated Concept Outcomes Across Customer Co-Creation Maturity Levels



Interpretation: The stacked graph shows that increasing co-creation maturity changes not only the overall validation rate but the composition of entrepreneurial learning. Lower-maturity ventures expend more effort revising or rejecting concepts after development has begun, whereas mature ventures incorporate customer knowledge earlier and therefore enter later testing with better-aligned concepts.

Key finding: The principal value of customer co-creation is not obtaining more positive feedback. It is increasing the probability that scarce entrepreneurial resources are committed to concepts that have survived meaningful interaction with the people expected to use or experience them.

6. Discussion

6.1 Co-Creation Should Replace Founder Certainty, Not Entrepreneurial Judgment

The first implication is that customer co-creation should challenge founder certainty without eliminating entrepreneurial judgment. Co-creation literature makes a strong case for recognizing customers as active contributors to innovation and value creation rather than as passive recipients. Prahalad and Ramaswamy emphasize interaction in value creation, while Hoyer and colleagues extend customer participation across product-development activities.

However, customers possess deep expertise in their own experiences rather than complete knowledge of technological feasibility, regulation, economics, or future organizational strategy. Asking customers to determine every design choice can therefore be as problematic as excluding them entirely. The role of the social entrepreneur is to translate customer evidence into entrepreneurial decisions. If users report difficulty using a service at particular times, the venture should identify the underlying problem rather than simply implement the first scheduling suggestion offered. Several alternative solutions may address the same underlying constraint.

Co-creation should therefore operate through problem authority and solution collaboration. Customers have strong authority concerning the problems they experience and the context in which an intervention is used. The venture remains responsible for integrating this evidence with technical, financial, ethical, and strategic knowledge to determine which solution should be tested.

6.2 Social Ventures Need Beneficiary-Sensitive Co-Creation

The second implication concerns representation. Social ventures cannot assume that paying customers are automatically representative of the people whose welfare defines the organization's mission. Hybrid social-enterprise models can create different relationships among customers, users, beneficiaries, and funders. Santos, Pache, and Birkholz's typology demonstrates that these relationships differ materially across social-enterprise business models.

This means customer co-creation should sometimes become multistakeholder co-creation. A health-related social venture, for example, may need input from service users, caregivers, clinicians, purchasers, and disadvantaged beneficiaries. An education venture may need to distinguish the preferences of paying institutions from the learning experience of students.

The objective is not to maximize the number of stakeholders included in every decision. Excessive participation can slow learning and create conflicting demands. Instead, the venture should identify who possesses relevant experiential knowledge for each assumption under investigation.

Feedback diversity is therefore an equity mechanism as well as a research-quality mechanism. When only accessible or affluent early adopters participate, the venture risks optimizing an intervention around people least affected by the constraints the social mission originally intended to address.

6.3 Mission Governance Converts Participation Into Sustainable Social Innovation

The third implication is that customer co-creation requires governance mechanisms capable of differentiating useful adaptation from mission drift. Social-enterprise research repeatedly identifies tensions arising from the simultaneous pursuit of social and commercial goals. Smith, Gonin, and Besharov characterize these tensions as persistent and multidimensional, while broader social-entrepreneurship reviews emphasize the distinctive organizational and business-model challenges created by social-purpose ventures.

An early-stage venture is particularly vulnerable because its business model is still fluid. A seemingly minor adjustment made in response to early paying customers can gradually reshape the intended beneficiary group, pricing architecture, distribution method, or impact mechanism.

The solution is not to restrict customer influence but to make mission criteria operational. Before a major customer-driven change is accepted, the venture can evaluate whether it improves user value, preserves accessibility, remains compatible with the intended social outcome, can be delivered responsibly, and supports a viable operating model.

Where trade-offs exist, they should be surfaced rather than hidden. A feature that increases willingness to pay may be acceptable if the resulting revenue subsidizes beneficiary access. The same feature may be inappropriate if it redirects scarce development capacity away from the social intervention itself. The answer depends on the venture's business model and mission architecture.

Co-creation maturity therefore involves responsive discipline. The venture listens continuously, changes readily when evidence justifies change, rejects suggestions when necessary, and communicates why important decisions were made. This combination can convert customer participation from a collection of preferences into a repeatable organizational learning capability.

7. Conclusion

Customer co-creation offers early-stage social ventures an important mechanism for reducing uncertainty before substantial financial, organizational, and reputational resources are committed to a particular solution. The established co-creation literature demonstrates that customers can contribute to innovation through ideation, development, testing, interaction, and broader resource integration rather than acting only as purchasers after development has finished. Social entrepreneurship adds a distinctive governance requirement because customer preferences must be interpreted alongside social-purpose commitments.

This study developed a Customer Co-Creation Maturity Framework for Social Ventures comprising customer-problem proximity, participation depth, feedback diversity, learning integration, mission-alignment governance, and feedback closure. The framework deliberately moves beyond measuring the number of workshops, interviews, or survey responses. Mature co-creation is defined by whether relevant customer knowledge enters the venture's decision process, produces testable changes, and remains compatible with its intended social contribution.

The simulation illustrates the internal logic of this framework. Customer-validated concepts increase from 26% to 78%, customer-problem understanding from 42% to 91%, feedback-to-prototype conversion from 29% to 87%, and early adoption intention from 38% to 82%, while learning-cycle duration decreases. These values are entirely synthetic. They are presented to operationalize the framework rather than to predict the performance of actual ventures.

Future empirical research should validate the CCMI-SV using longitudinal evidence from early-stage social ventures, beginning before initial prototype development and continuing through pilot implementation and early market entry. Researchers should distinguish customers from beneficiaries where appropriate and examine whether deeper co-creation improves adoption, affordability, social-impact alignment, venture survival, and learning efficiency. Comparative work could investigate healthcare, education, financial inclusion, environmental services, disability innovation, community technology, and livelihood-oriented ventures. The central conclusion is that customer co-creation creates the greatest value for early-stage social ventures when customers help challenge and improve the solution while the venture retains explicit responsibility for protecting the social problem it was created to address.

References

1. McDermott, K., Kurucz, E. C., & Colbert, B. A. (2018). Social entrepreneurial opportunity and active stakeholder participation: Resource mobilization in enterprising conveners of cross-sector social partnerships. *Journal of Cleaner Production*, 183, 121–131.
<https://doi.org/10.1016/j.jclepro.2018.02.010>
2. Dahan, N. M., Doh, J. P., Oetzel, J., & Yaziji, M. (2010). Corporate-NGO collaboration: Co-creating new business models for developing markets. *Long Range Planning*, 43(2–3), 326–342.
3. Di Domenico, M., Haugh, H., & Tracey, P. (2010). Social bricolage: Theorizing social value creation in social enterprises. *Entrepreneurship Theory and Practice*, 34(4), 681–703.
4. Austin, J., Stevenson, H., & Wei-Skillern, J. (2006). Social and commercial entrepreneurship: Same, different, or both? *Entrepreneurship Theory and Practice*, 30(1), 1–22.



5. Mair, J., & Martí, I. (2006). Social entrepreneurship research: A source of explanation, prediction, and delight. *Journal of World Business*, 41(1), 36–44.
6. Mair, J., & Martí, I. (2009). Entrepreneurship in and around institutional voids: A case study from Bangladesh. *Journal of Business Venturing*, 24(5), 419–435.
7. Desa, G. (2012). Resource mobilization in international social entrepreneurship: Bricolage as a mechanism of institutional transformation. *Entrepreneurship Theory and Practice*, 36(4), 727–751.
8. Desa, G., & Basu, S. (2013). Optimization or bricolage? Overcoming resource constraints in global social entrepreneurship. *Strategic Entrepreneurship Journal*, 7(1), 26–49.
9. Zadeh, A. H., Zolfagharian, M., & Hofacker, C. F. (2019). Customer–customer value co-creation in social media: Conceptualization and antecedents. *Journal of Strategic Marketing*, 27(4), 283–302. <https://doi.org/10.1080/0965254X.2017.1344289>
10. Ranjan, K. R., & Read, S. (2016). Value co-creation: Concept and measurement. *Journal of the Academy of Marketing Science*, 44, 290–315.
11. Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, 36, 1–10.
12. Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, 18(3), 5–14.
13. Payne, A. F., Storbacka, K., & Frow, P. (2008). Managing the co-creation of value. *Journal of the Academy of Marketing Science*, 36, 83–96.
14. Grönroos, C. (2011). Value co-creation in service logic: A critical analysis. *Marketing Theory*, 11(3), 279–301.
15. Plé, L., & Cáceres, R. C. (2010). Not always co-creation: Introducing interactional co-destruction of value in service-dominant logic. *Journal of Services Marketing*, 24(6), 430–437.
16. Ramaswamy, V., & Ozcan, K. (2018). What is co-creation? An interactional creation framework and its implications for value creation. *Journal of Business Research*, 84, 196–205.
17. Chatterjee, S., Rana, N. P., & Dwivedi, Y. K. (2021). Assessing consumers' co-production and future participation on value co-creation and business benefit: An F-P-C-B model perspective. *Information Systems Frontiers*, 24, 945–964.
18. Zhang, H., Chau, P. Y. K., Wang, B., & Luo, X. R. (2021). Social media-enabled customer co-creation experience value: Conceptualisation and measurement. *European Journal of Information Systems*.