

From Utility to Belonging: Re-Socializing the Technology Entrepreneur through Evolutionary Psychology

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Abstract: Technology-driven startups typically emerge from a "product-first" logic, where systematic consideration of markets often lags behind technical development. In early-stage venture creation, entrepreneurs frequently reduce customer understanding to functional utility or demographic segments, neglecting the deep-seated psychological and social dimensions that drive long-term brand resilience. This research addresses this gap by documenting the initial strategic mindsets of technology entrepreneurs and proposing a theory-informed training framework designed to shift their focus toward social value creation. The paper presents a "Customer Understanding" training module, which functions as a specific intervention within the broader Tech2Scale startup coaching programme. This framework integrates evolutionary psychology (EP) and tribal branding theory to reframe brands as "social coordination mechanisms" rather than mere symbols of product differentiation. By utilizing evolutionary insights into human motives—such as the need for status signaling and cooperative group membership—the training guides entrepreneurs to move from "use value" (technical utility) toward "linking value" (social embeddedness). Empirically, the paper analyzes baseline data collected from a targeted cohort of university researchers, startup founders, and students (n=10) specifically prior to the commencement of training. Although the sample size is small, it represents a high-validity group of nascent entrepreneurs actively engaged in new venture creation, rather than a generalized student population. Exploratory evidence suggests the presence of a techno-centric bias in this cohort of early-stage entrepreneurs, with participants emphasizing technical utility over social and relational dimensions of value creation. Crucially, the pre-training data suggest relatively low interest in social dynamics; respondents showed the lowest agreement with the idea that a brand should act as a coordination mechanism for users to find one another (M=2.6) and largely conceptualized customers as isolated problem-solvers rather than members of affectual tribes. Given the small sample (n = 10) and the descriptive nature of the analysis, these findings should be interpreted as indicative rather than generalizable. The empirical component is therefore positioned as exploratory, aimed at diagnosing initial cognitive orientations prior to intervention.

Keywords: Technology Entrepreneurship, Evolutionary Psychology, Branding, Evolutionary Mismatch, Customer Understanding, Tech2Scale.

1. Introduction

The contemporary landscape of technology entrepreneurship is characterized by unprecedented innovation alongside persistently high rates of venture failure. While technical feasibility is often achievable, challenges related to market adoption—particularly difficulties in attaining product–market fit—remain a central concern in early-stage ventures. Prior research suggests that one contributing factor may be the prevalence of a "product-first" or "techno-centric" logic, whereby founders, often with strong scientific or engineering backgrounds, emphasize functional novelty and technical performance over broader considerations of customer value (Mullins 2014; Ries 2011).

This orientation tends to reflect an implicit model of the consumer as primarily rational and utility-driven, evaluating innovations based on "use value" such as efficiency, speed, or cost reduction. However, alternative perspectives in marketing and consumer research highlight the importance of "linking value"—the social connections, identities, and shared meanings associated with consumption (Cova 1997). From this viewpoint, consumption is not solely an individual, problem-solving activity but is also embedded in social dynamics. Consequently, the assumption that superior technical performance alone ensures adoption may be incomplete.

Insights from consumer behavior and evolutionary psychology further suggest that decision-making is influenced by evolved motivations related to social connection, status signaling, and group belonging (Saad 2007; Giskevicius and Kenrick 2013). These perspectives indicate that value perception extends beyond functional attributes to include socially embedded and symbolic dimensions. The potential divergence between a technically oriented value conception and a socially grounded consumer reality may therefore represent an important, yet underexplored, source of misalignment in early-stage ventures.

In this paper, this divergence is tentatively conceptualized as a form of cognitive bias that may be related to what has been described in evolutionary research as an "evolutionary mismatch" (Van Vugt and Ronay 2014). Modern technological environments often encourage abstract, feature-based reasoning, whereas human cognition evolved in contexts where navigating social relationships and group dynamics was central. From this

perspective, entrepreneurs may underemphasize the "linking value" of their offerings—the capacity of products or brands to facilitate social interaction and coordination—while prioritizing their functional utility (Cova 1997).

To explore this possibility, the present study introduces a pedagogical intervention, the "Customer Understanding" module, developed within the Tech2Scale startup training framework. The module draws on evolutionary psychology to reframe branding as a process of enabling social coordination rather than solely communicating product features. The aim is to support a shift in entrepreneurial thinking from a focus on individual users toward a broader consideration of social and communal dynamics in value creation.

This paper contributes to entrepreneurship education and early-stage venture research in two ways. First, it offers an evolutionary psychology-informed conceptualization of techno-centric bias as a potential constraint on market-oriented thinking. Second, it presents a theory-informed training intervention alongside an exploratory empirical component. Specifically, the study reports descriptive baseline data from a small, targeted sample of nascent technology entrepreneurs ($n = 10$), which provides initial, diagnostic insight into how participants conceptualize customer value. Given the limited sample size and descriptive design, these findings are interpreted as indicative rather than generalizable, and are used primarily to motivate and inform the proposed training framework.

2. Theoretical Background

To construct a robust pedagogical framework for shifting entrepreneurial mindsets, we must first deconstruct the theoretical underpinnings of the "techno-centric" bias and the alternative "socio-centric" perspectives offered by evolutionary psychology and tribal marketing.

2.1 The "Product-First" Logic and the Engineering Mindset

Technology ventures often originate in laboratory and engineering environments where value is framed as objective, measurable, and functional. This context reinforces a "product-first" logic (Mullins 2014) in which technical superiority is assumed to translate into adoption. When founders move into venture creation, they may carry a stable preference for proximate, feature-based explanations of value and view customers primarily as utility maximizers. In practice, however, market responses are shaped by social and motivational factors that are not fully captured by technical performance alone. Bridging this gap therefore requires a conceptual vocabulary that links product attributes to the broader psychological and social drivers of choice.

2.2 Evolutionary Psychology: Proximate vs. Ultimate Causation

Evolutionary psychology (EP) challenges the rational-actor model by proposing that human decision-making is shaped by domain-specific psychological mechanisms that evolved to solve recurrent adaptive problems (Saad 2007; Cosmides and Tooby 1997). Within this perspective, a key analytical distinction is between proximate and ultimate causation (Saad 2012; Griskevicius and Kenrick 2013). Proximate explanations refer to the immediate triggers of behaviour and typically map onto functional product attributes ("what the product does"). Ultimate explanations refer to the underlying functional motives that make those attributes meaningful ("why it matters" in terms of evolved goals). For example, cybersecurity can be framed not only as data encryption (proximate), but also as harm avoidance and protection of valued resources (ultimate). This distinction is relevant for technology entrepreneurs because early-stage communication often remains at the proximate level, while stronger resonance may occur when product benefits are linked to deeper social and motivational concerns.

2.3 The Evolutionary Mismatch Hypothesis

Mismatch theory suggests that intuitions shaped for small-scale, relational environments may not transfer well to large, anonymous markets (Van Vugt and Ronay 2014). Founders may therefore over-rely on the assumption that functional utility will be self-evident and sufficient for adoption. In contemporary markets, however, direct maker–user relationships are often weak and information is abundant but unevenly trusted. Under these conditions, brands can partially substitute for personal reputation by compressing reputational information, signaling reliability, and reducing uncertainty in evaluation.

2.4 Prestige-Biased Social Learning and Branding

Evolutionary accounts of social learning suggest that humans preferentially attend to, imitate, and defer to individuals who display success, skill, or knowledge—an adaptation that supports efficient learning under

uncertainty (Henrich and Gil-White 2001). In contemporary markets, brands can function as abstract prestige targets by aggregating reputational cues and making them legible at scale. Strong brands therefore operate as simplified signals of credibility and competence, helping audiences form evaluations in environments where direct experience is limited. In this sense, brand communication can be treated as strategic signaling that reduces evaluation costs and shapes cooperative expectations (Henrich and Gil-White 2001; Sundararajan and Sundararajan 2023).

2.5 From Use Value to Linking Value: The Societing Perspective

To operationalize these evolutionary insights, this research draws on the "Latin School of Societing," particularly the work of Cova (1997). This perspective critiques the "Northern" marketing tradition, which views consumption as an individualistic act of utility maximization (Use Value). Instead, the Latin approach argues that "the link is more important than the thing"—that is, products are consumed primarily for their ability to facilitate social interaction and tribal bonding (Linking Value).

- Use Value: The functional utility of the product (e.g., the code, the machine). This is the domain of the engineer.
- Linking Value: The social embeddedness provided by the product (e.g., the community, the status, the identity). This is the domain of the tribal marketer.

In the context of the Tech2Scale program, "Tribal Marketing" is presented not as a superficial trend, but as a mechanism to "re-establish communal embeddedness" in a fragmented world. It is a "Trojan horse" to induce technical companies to engage with the social reality of their users. By teaching entrepreneurs to design for linking value, this approach encourages them to view their startup not as a vendor of goods, but as a social coordination mechanism.

2.6 Positioning Evolutionary Psychology Among Complementary Perspectives

While evolutionary psychology provides a useful framework for identifying underlying motivational drivers of consumption, it is important to recognize its scope and limitations. In particular, evolutionary accounts tend to focus on ultimate explanations—why certain psychological tendencies exist—rather than fully specifying how these tendencies are expressed in specific institutional, cultural, or situational contexts (Saad 2012; Griskevicius and Kenrick 2013). As a result, complementary perspectives remain important for a comprehensive understanding of entrepreneurial decision-making and consumer behavior.

For example, cognitive and information-processing approaches offer insight into how individuals form judgments under uncertainty, while sociocultural and institutional perspectives emphasize how meanings, norms, and practices are shaped through interaction and context (Ries 2011; Cova 1997). Similarly, behavioral and situational frameworks highlight how environmental cues and reinforcement structures influence observable behavior. From this perspective, evolutionary psychology is best understood not as a replacement for these approaches, but as a complementary layer that helps explain the deeper motivational foundations upon which context-specific processes operate.

In the context of this study, the evolutionary lens is therefore used as a theoretical tool to illuminate why social motives such as affiliation, status, and trust may remain relevant even in highly technical markets, while recognizing that their manifestation depends on the specific market, cultural, and organizational conditions in which entrepreneurs operate (Taheran et al. 2024). Figure 1 summarizes the conceptual shift from a techno-centric to a socio-centric understanding of value that underpins the proposed training framework.

Table 1: From Techno-Centric to Socio-Centric Value Orientation

Techno-Centric Orientation	→ Shift (Training Intervention)	Socio-Centric Orientation
Value = functional utility ("use value")		Value includes social embeddedness ("linking value")
Focus on product features and performance		Focus on identity, status, and affiliation
Customer as individual problem-solver		Customer as member of a social group ("tribe")
Communication: "what the product does"		Communication: "why it matters"

Techno-Centric Orientation	→ Shift (Training Intervention)	Socio-Centric Orientation
Brand as differentiation label		Brand as social coordination mechanism

The figure illustrates the conceptual shift targeted by the Tech2Scale Customer Understanding module, moving from a product-centered, utility-focused logic toward a socially embedded understanding of value that incorporates identity, signaling, and coordination functions.

3. Methodology

This study uses an exploratory, descriptive design to profile the strategic mindsets of technology entrepreneurs prior to training. The paper reports baseline survey responses collected immediately before the Customer Understanding module.

3.1 Context: The Tech2Scale Programme

The research was conducted within the Tech2Scale startup coaching programme, a specialized accelerator for early-stage technology ventures. It is important to note that the training intervention described in this paper constitutes only two specific modules within the broader Tech2Scale curriculum. The full programme encompasses diverse topics such as financial modeling, intellectual property rights, and technical scaling. The "Customer Understanding" module, which serves as the intervention for this study, was designed specifically to address the weaknesses observed in previous cohorts regarding brand and customer conceptualization.

3.2 Participants

The study cohort consists of 10 participants recruited from the Tech2Scale programme. While the sample size ($n=10$) is numerically small, it is theoretically significant and highly relevant for the purpose of this study. The participants are not a generalized student population; they represent a "hard-to-access" group of **nascent entrepreneurs** (Davidsson and Honig 2003). These individuals are actively engaged in the venture creation process, possess verifiable intellectual property (IP), and have committed resources to their startups.

Demographic Profile ($n=10$):

The cohort is predominantly male and highly educated, reflecting the typical demographic of university-spinoff and deep-tech ecosystems.

- Gender: 90% Male (9), 10% Female (1). This gender imbalance is consistent with the broader "techno-centric" bias literature, which often associates male-dominated engineering cultures with a focus on functional utility over social empathy (Saad 2007).
- Age Distribution: The participants span a range of developmental stages, with 50% aged 25-34, 30% aged 35-44, 10% aged 18-24, and 10% aged 45-54.
- Professional Status: The group is a mix of academic and entrepreneurial identities: 40% are University Researchers/Academic Staff, 30% are Full-time Entrepreneurs/Founders, and 30% are Bachelor-level Students (who are also founders).
- Geographic Origin: The cohort is primarily based in Finland (80%), with representation from Spain (10%) and Romania (10%).

This demographic profile suggests a group that is high in technical literacy but potentially resistant to "soft" marketing concepts, making them an ideal testbed for the "Trojan Horse" pedagogical strategy.

3.3 Instrumentation

To measure the "techno-centric" vs. "socio-centric" orientation of the participants, a structured survey instrument was developed based on the theoretical frameworks of Evolutionary Psychology and Tribal Marketing. The survey consisted of 6 core items scored on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree).

Survey Items and Theoretical Justification:

Utility vs. Status: "The primary value of our innovation is its utility (how well it performs a task) rather than the social status it confers."

Construct: Measures the dominance of "Use Value" over "Signaling/Status" motives.

Feature Differentiation: "Our product/innovation/company/brand is primarily a tool to differentiate our technical features from competitors."

Construct: Measures adherence to "Product-First" logic and the view of branding as a label rather than a symbol.

Demographic Definition: "Our target market is best defined by demographic data (age, gender, income) and geographic location."

Construct: Measures reliance on traditional, static segmentation versus fluid, psychographic/tribal segmentation.

What vs. Why: "Our early-stage communication focuses on explaining 'what' the product does rather than 'why' humans need it biologically."

Construct: Measures the focus on proximate vs. ultimate causation in communication strategy (Saad 2012).

Isolated vs. Tribal: "I view our customers as individual problem-solvers rather than members of an affectual 'tribe'."

Construct: Measures the "Atomistic" view of the consumer characteristic of Northern marketing versus the "Tribal" view of the Latin school.

Social Coordination: "A Company/brand should act as a 'social coordination mechanism' that allows users to find one another."

Construct: Measures the awareness of the brand's function as a Knowledge Management/Coordination system.

3.4 Procedure

The survey was administered electronically to all participants immediately prior to the first session of the training module. This ensured that the responses reflected the participants' raw, uninfluenced strategic instincts. The data was collected and anonymized for analysis.

4. Findings

The following findings are presented as descriptive indicators of participants' baseline orientations and should be interpreted as exploratory rather than statistically generalizable. The analysis of the pre-training survey data (n=10) suggests a techno-centric orientation across the cohort. The participants consistently prioritized functional and technical dimensions of value while deprioritizing or rejecting social and symbolic dimensions.

4.1 The Primacy of Utility and Features

One of the more consistent patterns among participants was the belief that their value lies in the tool itself, consistent with the 'product-first' hypothesis.

Utility Dominance (M=4.3): Item 1 received the highest mean score (M=4.3), with 50% of respondents selecting "Strongly Agree" (5) and 40% selecting "Agree" (4). Only one respondent scored it a 3. This suggests a strong tendency that the innovation's worth is intrinsic to its performance of a task. The notion that "status" could be a primary value driver appeared to be less salient in participants' responses. This aligns with the engineering worldview where "utility" is objective and "status" is subjective or superficial.

Differentiation via Features (M=4.1): Item 2 also received high agreement (M=4.1). Participants view their brand not as a vessel for meaning or emotion, but as a taxonomy for their technical specifications. Participants appear to treat the brand primarily as a vehicle for communicating technical differentiation rather than as a mechanism for conveying identity, affiliation, or social meaning. This reflects limited emphasis on the brand's role as a "knowledge compression device"; they are using the brand to transmit complex data (features) rather than efficient signals (prestige).

4.2 Limited Emphasis on Social Coordination

One of the more notable findings is the cohort's limited awareness regarding the social functions of a brand.

Rejection of Social Coordination (M=2.6): Item 6 received the lowest score in the survey (M=2.6). Responses were polarized but skewed negative, with several participants scoring 1 or 2. This suggests that the concept of a brand acting as a "social coordination mechanism"—a central tenet of both the Tech2Scale framework and Tribal Marketing theory— was not strongly represented in participants' responses. They do not see their companies as platforms for connecting users to one another.

Atomistic Customer View (M=3.0): Responses to Item 5 were mixed (M=3.0), indicating ambivalence. While not as strongly rejected as social coordination, the score suggests a default view of the customer as an isolated agent ("Homo Oeconomicus"). Participants tended to describe customers as individuals struggling with a problem in a vacuum, rather than as members of an "affectual tribe" who might use the product to signal affiliation or competence to peers.

4.3 Communication and Segmentation Biases

Proximate Communication (M=3.5): Item 4 (M=3.5) suggests a moderate tendency to focus communication on "what" the product does. While some entrepreneurs recognized the need for "why" messaging, the bias leans toward functional description. This is consistent with the difficulty technical founders face in articulating "ultimate" evolutionary benefits.

Traditional Segmentation (M=3.1): Item 3 (M=3.1) shows a reliance on standard demographic segmentation. While not overwhelmingly high, it suggests that the shift toward psychographic or tribal segmentation is not strongly evident in the responses. Participants are still defining their markets by "who they are" (age, location) rather than "what they love" (passion, tribe).

Table 2: Baseline Survey Results (n=10)

Survey Item	Mean	SD	Min–Max	% Agree (4–5)	% Neutral (3)	% Disagree (1–2)	Interpretation
1. Utility vs. Status	4.3	0.68	3-5	90%	10%	0%	High utility emphasis
2. Feature Differentiation	4.1	0.99	3-5	60%	40%	0%	Strong product/feature focus
3. Demographic Market Definition	3.1	1.29	1-5	50%	10%	40%	Mixed; moderate traditional segmentation
4. What vs. Why Communication	3.5	1.43	1-5	70%	10%	20%	Moderate "what"-focused communication
5. Isolated vs. Tribal View	3.0	1.15	1-5	30%	40%	30%	Mixed / ambivalent customer model
6. Social Coordination	2.6	1.17	1-5	10%	50%	40%	Low endorsement of social coordination

Baseline results (n = 10) indicate a clear product-first orientation. Participants strongly endorsed the primacy of functional utility (Item 1: M = 4.3, SD = 0.68), with 90% agreeing and no disagreement, and they also tended to view the brand primarily as a vehicle for technical feature differentiation (Item 2: M = 4.1, SD = 0.99; 60% agree, 40% neutral). In contrast, items capturing social and community-oriented dimensions received weaker endorsement. The lowest-rated construct was the view of the brand as a social coordination mechanism (Item 6: M = 2.6, SD = 1.17), with only 10% agreement, 50% neutral responses, and 40% disagreement. Customer conceptualization was similarly mixed: perceptions of customers as isolated problem-solvers versus members of an affectual tribe clustered around neutrality (Item 5: M = 3.0, SD = 1.15; 40% neutral, 30% agree, 30% disagree). Finally, responses to segmentation and communication items suggest moderate variability: demographic/geographic market definition was polarized (Item 3: M = 3.1, SD = 1.29; 50% agree, 40% disagree), while early-stage messaging showed a moderate tendency to emphasize "what" the product does over "why" it matters (Item 4: M = 3.5, SD = 1.43; 70% agree, 20% disagree).

4.4 Limitations and Analysis Plan

This paper reports baseline descriptive results from a small cohort ($n=10$) recruited from a specialized accelerator context. The limited sample size constrains statistical power and generalizability; accordingly, the findings are interpreted as exploratory rather than confirmatory. The cohort is also heterogeneous (researchers, founders, and students), which may introduce variation in prior market exposure and familiarity with branding concepts. The six-item instrument is theory-driven and aligned with the study's conceptual framework, but it is not presented as a fully validated psychometric scale; results are therefore interpreted at the item level as indicators of founders' baseline assumptions. Given the small sample, this paper reports item-level descriptives and does not model a latent "techno-centric bias" factor.

Given these constraints, the analysis emphasizes transparent reporting of response patterns (e.g., central tendency and distribution by item) and a cautious interpretation that links observed baseline profiles to the paper's theoretical argument and training framework. The study is conducted by a single researcher, which limits opportunities for independent verification of interpretation; to mitigate this, the paper prioritizes procedural clarity, explicit mapping from theory to measurement, and appropriately bounded claims.

5. The Intervention: Two-Module Training Framework

Based on the baseline findings, the Tech2Scale "Customer Understanding" training is structured into two modules embedded within the wider Tech2Scale curriculum. The pedagogical approach uses evolutionary psychology as a theory-led entry point for introducing socially embedded interpretations of value to technically trained founders.

5.1 Module 1: Exploring Human Nature

Objective: Expand founders' value framing from proximate product attributes ("what it does") to underlying motivational functions ("why it matters").

- Introduce the Fundamental Motives framework and discuss how consumption often reflects recurring motives such as harm avoidance, affiliation, and status (Griskevicius and Kenrick 2013; Taheran et al. 2024).
- Activity: Founders reframe their value proposition by mapping key product features onto one or more fundamental motives (e.g., cybersecurity as both encryption and harm avoidance).

5.2 Module 2: Strategic Brand Building for Value

Objective: Translate evolutionary insights into practical brand-building choices that emphasize linking value and social coordination.

- Introduce linking value and the role of brands as mechanisms that coordinate expectations and signal identity and credibility (Cova 1997).
- Activity: Founders create a brief "tribal map" that specifies the focal user group, the identity/status signals the brand supports, and concrete ways the brand can help users connect with one another (social coordination).

6. Discussion

The baseline profile offers a focused snapshot of how early-stage technology entrepreneurs in this cohort conceptualize value and branding prior to any training. Two patterns are particularly noteworthy. First, participants strongly endorsed the primacy of functional utility and feature-based differentiation (Items 1–2), consistent with a product-first logic. Second, the cohort showed comparatively low endorsement of the idea that a brand can function as a social coordination mechanism (Item 6), suggesting that "linking value" is not yet a salient category in founders' mental models.

Interpreted cautiously, these descriptives are consistent with the paper's core premise: in founder cognition, the customer appears to be approached as an individual problem-solver evaluating technical attributes, rather than as a socially embedded actor whose consumption decisions can be shaped by affiliation, status, trust, and group membership motives. From an evolutionary psychology perspective, this pattern is consistent with an emphasis on proximate explanations (what the product does) over ultimate explanations (which fundamental motives the product helps satisfy). The implication for entrepreneurship education is not that functional utility

is unimportant, but that founders may benefit from an expanded value ontology that includes symbolic and social functions of brands—particularly in markets where products are difficult to evaluate directly and where trust and reputation reduce uncertainty.

The proposed pedagogical approach is intentionally designed to meet technical founders “on their own epistemic ground.” Rather than introducing branding as an aesthetic or purely affective exercise, the intervention frames social motivations and symbolic meaning as stable regularities in human decision-making. In this framing, brands can be understood as culturally transmitted knowledge structures that simplify choice and coordinate expectations among dispersed actors. The intervention logic is therefore straightforward: if founders can map product attributes onto fundamental motives (e.g., harm avoidance, status, affiliation), they may become more capable of articulating “why this matters” in ways that resonate with users’ evolved social psychology, not only users’ functional problem definitions.

These results should be interpreted in light of the study’s constraints (small, context-specific sample; baseline-only reporting). Nevertheless, the baseline pattern serves an important role: it provides empirical grounding for the training design and identifies the specific cognitive “blind spot” the intervention targets—namely, limited recognition of brands as social coordination mechanisms and underutilization of linking value as a strategic lens.

7. Conclusion

This paper develops a theory-informed approach for broadening technology entrepreneurs’ conceptions of value beyond a predominantly product-first orientation to include social embeddedness and linking value. Drawing on baseline data from a cohort of nascent founders (n=10), the study describes a pattern consistent with techno-centric assumptions: strong prioritization of utility and feature differentiation alongside comparatively low endorsement of brands as mechanisms that coordinate and connect users.

The implications are primarily pedagogical and conceptual. In complex and information-rich markets, product performance may be necessary but not sufficient for sustained adoption. Evolutionary psychology provides a coherent explanatory vocabulary for why social motives—such as status, affiliation, and trust—remain relevant in contemporary consumption contexts and can therefore complement functional accounts of customer value. Within this framing, the Tech2Scale Customer Understanding module is presented as a structured way to translate these motives into founder-relevant managerial language, with the aim of improving how technically trained entrepreneurs conceptualize customers and articulate value propositions.

Given the study’s scope and sample characteristics, the findings should be interpreted as exploratory. The paper therefore emphasizes transparent description of baseline response patterns and uses these patterns to motivate the proposed training framework and articulate bounded implications for entrepreneurship education and early-stage venture development.

Ethics Declaration

The data collection procedures described in this study involved human participants (survey respondents) within the context of an educational training program. The study was conducted in accordance with the ethical guidelines of the participating institutions. All participants were informed of the purpose of the survey and provided consent prior to participation. Data was collected anonymously to protect participant privacy. No formal ethical clearance committee review was required for this low-risk educational assessment, in accordance with the regulations of the host institution regarding pedagogical research.

AI Declaration

Artificial Intelligence tools were used in the drafting and editing of this paper. The author utilized a large language model to assist in structuring the argument, refining the language for academic tone, summarizing the theoretical backgrounds based on the provided reference materials, and formatting references. The author reviewed and verified all AI-generated content for accuracy and coherence.

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