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Incubation, ideation and business model development: Lessons from DUT's Centre for Social Entrepreneurship Rapid Incubator

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ABSTRACT

This study investigates the role of ideation programs within a rapid incubation framework in supporting business model development for small to medium enterprises. Conducted at the Durban University of Technology's Centre for Social Entrepreneurship Rapid Incubator, the research employed a quantitative survey of 52 student entrepreneurs. The results indicate that participants view ideation programs as highly influential in refining their business models, particularly in enhancing understanding of customer needs, improving value propositions, and promoting experimentation. The measurement tool used demonstrated high reliability (Cronbach's alpha = 0.906). Statistical analysis showed that perceived benefits varied significantly based on the entrepreneurs' age and the duration of their enterprise operations. The study concludes that ideation programs serve as an effective mechanism for fostering effectual decision-making principles, such as affordable loss and flexibility, which are essential for managing uncertainty. It is recommended that incubators design programs tailored to the developmental stage of both the entrepreneurs and their ventures to maximize their effectiveness in strengthening business model viability.

1. Introduction

Entrepreneurship has become a vital approach for addressing socio-economic inequalities both in South Africa and globally. Effective support structures are necessary to facilitate the ideation, development, and scaling of ventures that deliver both social impact and financial sustainability. Incubators serve as one such support

mechanism and are increasingly being evaluated for their contributions to enterprise survival, growth, and innovation (Hewitt & Janse van Rensburg, 2020). Today, incubators are expected to go beyond providing infrastructure; they are anticipated to offer tailored capacity-building, mentorship, networking opportunities, and business model refinement (Hewitt & Janse van Rensburg, 2020; Bucci & Marks, 2022). In this context, rapid incubation programmes are particularly attractive because they condense the periods of idea generation and application, allowing social entrepreneurs to rapidly test assumptions and develop viable models.

The process of ideation—producing, refining, and validating new venture ideas—is fundamental in transforming early-stage concepts into market- or social-context-ready business models. Recent research indicates that idea incubation is not a linear process but involves iterative micro-processes of framing, prototyping, testing, and revisions (Mugadza & Myers, 2023). Additionally, entrepreneurs have specific learning needs: while incubators teach core business and entrepreneurial skills, many programmes do not adequately address social-mission-specific components (such as multi-stakeholder management and impact measurement) or balance the dual priorities of profit and social impact (Bucci & Marks, 2022). Understanding how incubation processes and ideation interact is therefore crucial for effective business model development.

Developing a business model within such incubative environments involves defining value propositions, mobilizing resources, establishing revenue streams, and identifying pathways to sustainability amid uncertainty. Incubators can influence these elements through access to mentors, networks, funding opportunities, and structured feedback (Hewitt & Janse van Rensburg, 2020; Bucci & Marks, 2022). Nonetheless, challenges remain, particularly in South Africa, where many incubators adopt a “one-size-fits-all” approach that does not sufficiently differentiate based on the specific social mission or the maturity level of the entrepreneurs (Hewitt & Janse van Rensburg, 2020). This study aims to provide insights into how rapid incubation programmes can better integrate ideation with business model development to support enterprises in becoming sustainable while remaining aligned with their missions by examining DUT’s Centre for Social Entrepreneurship Rapid Incubator

Theoretical Perspectives – Effectuation theory

Effectuation theory provides a decision-making framework for entrepreneurs that diverges from traditional prediction-based planning. Instead, it emphasizes leveraging available means, forming strategic partnerships, maintaining flexibility, and focusing on manageable losses. While early research established its theoretical foundations, recent studies have applied and validated effectuation across various contexts, including small and medium-sized enterprise (SME) growth, startup incubation, and business model innovation (Nyoni & Moos, 2022; Prijadi et al., 2023; De Villiers Scheepers, Gronum & Cranney, 2024). This underscores the relevance of effectuation as a guiding perspective for understanding how incubation and ideation initiatives—such as those conducted at Durban University of Technology’s (DUT) Centre for Social Entrepreneurship Rapid Incubator—can facilitate SME business model development.

Core Principles of Effectuation and Their Significance

The first core principle is means-driven action, often referred to as the “bird-in-hand” approach. Entrepreneurs start with their existing skills, networks, and resources, and use these assets to create opportunities (Sarvasvathy, 2001). In ideation programs, student entrepreneurs or SMEs typically do not have fully developed business models; however, incubation provides access to mentors, peers, and institutional resources. This aligns with research by Solaimani, van Eck, Kievit, and Koelemeijer (2022), who found that non-digital SMEs can utilize

existing resources for prototyping and incremental innovation, rather than postponing action until ideal resources are obtained.

The second principle is affordable loss, which involves limiting downside risk by focusing on what the entrepreneur can afford to lose. In incubation and ideation settings, this principle supports iterative experimentation through small-scale testing of business model components such as customer segments, revenue streams, or distribution channels. According to Abdullah, Saraswat and Talib (2023), SMEs that adopt lean, affordable experiments are more adaptable and resilient. This principle is particularly critical for SMEs operating in resource-constrained environments like KwaZulu-Natal, where limited funding makes prudent risk management essential for survival and growth.

Another key principle is forming partnerships and pre-commitments, known as the “crazy quilt.” Entrepreneurs co-create their ventures by engaging stakeholders, partners, and customers early in the process. Incubation programs naturally facilitate this engagement by connecting SMEs with mentors, peer groups, and networks, thereby expanding resources and validating ideas. Prijadi et al. (2023) emphasize that effectuation, combined with stakeholder involvement, fosters business model innovation in platform-based startups. Such collaborative approaches enable SMEs within incubators like DUT to develop viable, stakeholder-grounded business models.

The principle of embracing contingencies parallels incubation practices, encouraging entrepreneurs to adapt to unexpected challenges and opportunities rather than rigidly adhering to predefined plans. Nyoni and Moos (2022) found that experimentation and flexibility—a reflection of effectual behaviors—are significantly associated with financial growth among township SMEs in South Africa. Incubators that promote pivots and responsiveness to feedback create an environment conducive to refining business models dynamically.

Finally, the “pilot-in-the-plane” principle reflects the belief that entrepreneurs can influence their future through proactive actions rather than relying solely on predictions. For incubation programs, this underscores the importance of iterative testing, feedback, and revisions in business model development, rather than attempting to foresee every variable (De Villiers Scheepers et al., 2024). This action-oriented, cyclical approach aligns with the realities of university-based ideation programs, where uncertainty is prevalent, but adaptability is vital.

Empirical Evidence and Application to DUT’s Rapid Incubator

Recent research highlights the importance of effectuation in incubation and ideation processes. Nyoni and Moos (2022) observed that small and medium-sized enterprises (SMEs) applying effectual approaches—such as experimentation and adaptability—achieved better financial outcomes. This suggests that ideation programs should actively teach and incorporate these practices. Similarly, Prijadi et al. (2023) demonstrated that effectual behavior promotes business model innovation when combined with absorptive capacity and external collaboration, both of which can be facilitated by incubators. Additionally, De Villiers Scheepers et al. (2024) found that practices like experimentation, forming partnerships, and accepting affordable losses enable firms to redesign their business models in response to crises such as COVID-19. These findings indicate that incubation programs are most effective when they promote flexibility, iterative testing, and collaborative learning, rather than solely relying on rigid forecasting.

In the context of DUT's Rapid Incubator, effectuation theory offers several meaningful implications. Firstly, support for ideation should encourage student entrepreneurs to utilize their existing resources—such as skills, networks, and university facilities—to take action. Secondly, the training should emphasize affordable experimentation, enabling SMEs to test various aspects of their business models with minimal investment. Thirdly, the incubator should facilitate the formation of early partnerships and stakeholder commitments to expand resource access and co-develop business models. Fourthly, processes should be designed to be flexible and responsive, allowing participants to pivot based on feedback or emerging opportunities. Finally, the incubator should foster an action-oriented mindset among SMEs, encouraging them to shape their futures proactively rather than relying solely on predictive planning.

Limitations of Effectuation

While effectuation provides valuable insights, it also has limitations. Kitching and Rouse (2020) warn that structural barriers—such as regulatory constraints, limited access to finance, and institutional hurdles—can hinder SMEs' ability to fully implement effectual strategies. Furthermore, incubators that depend heavily on donor or funder requirements may be required to follow formal planning and forecasting processes, which can restrict the scope for effectual experimentation. Consequently, ideation programs should consider balancing effectual approaches with causal reasoning as businesses progress and develop.

Effectuation theory aligns well with the theme "Incubation, Ideation, and Business Model Development: Lessons from DUT's Centre for Social Entrepreneurship Rapid Incubator." Its core principles—such as leveraging available means, accepting affordable losses, forming partnerships, maintaining flexibility, and focusing on control over prediction—directly support how incubators and ideation programs can assist SMEs facing uncertainty and resource limitations. Empirical studies confirm that adopting effectual behaviors enhances SMEs' adaptability, innovation, and ability to develop resilient business models (Nyoni & Moos, 2022; Prijadi et al., 2023; De Villiers Scheepers et al., 2024). For DUT's Rapid Incubator, integrating effectuation principles into program design is essential to help SMEs create resilient, adaptable, and collaboratively developed business models.

2. Literature Review

Research conducted since 2020 highlights that university-affiliated incubators and ideation programs play a vital role in guiding early-stage ventures through the development and refinement of their business models. The effectiveness of these initiatives is influenced by factors such as program design, resource availability, external connections, and learning processes (Pattanasak et al., 2022; Egbetokun, 2023). Empirical research and systematic reviews reveal common themes: incubator services must be tailored to meet the specific needs of incubatees; access to finance and absorptive capacity are critical constraints; and adaptive, practice-based learning approaches—such as experimentation, prototyping, and stakeholder engagement—are associated with improved business model performance for SMEs (Kayser, Telukdarie & Philbin, 2023; De Villiers Scheepers, Gronum & Cranney, 2024). These insights are particularly relevant for DUT's Centre for Social Entrepreneurship Rapid Incubator (CSERI) and comparable university incubator initiatives in KwaZulu-Natal.

Incubation and Ideation Program Effectiveness

Systematic reviews indicate that incubator success is multifaceted, involving resource provision (such as workspace, funding, and mentoring), capability development (through training and coaching), and external market linkages (to investors and industry partners). The performance of these programs depends on how well these components are integrated (Pattanasak et al., 2022; Egbetokun, 2023). Evidence suggests that incubators

offering customized services aligned to the maturity level of ideas—rather than standardized packages—achieve better venture outcomes. Additionally, programs that deliver staged support, tailored to the development phase of ventures, are particularly effective (Pattanasak et al., 2022). Regional studies from Africa highlight the diversity of incubator models and emphasize the importance of designing programs that are contextually appropriate for local entrepreneurial ecosystems (Egbetokun, 2023).

Business Model Development in SME Contexts

The evolution of business models among SMEs is an iterative process that benefits from continuous testing and refinement based on market feedback, mentorship, and resources for rapid prototyping (Prijadi et al., 2023 and Noor, Hubbansyah, Hatta and Siswono, 2025). Recent empirical findings indicate that initiatives encouraging affordable experimentation, active customer engagement, and quick prototyping contribute to more robust business models and greater resilience during external shocks (De Villiers Scheepers et al., 2024). For resource-constrained SMEs, adopting lean or staged approaches to testing different components of the business model—such as value propositions, customer segments, and revenue mechanisms—is especially advantageous (Abdullah, Saraswat and Talib, 2023).

Constraints Related to Capacity, Funding, and Readiness

A recurring theme in the literature is that SMEs often face limitations in managerial capacity, technical skills, and financial preparedness, which hinder their ability to fully utilize ideation and incubation support. Research focusing on South African SMEs shows that challenges such as limited access to appropriate financial instruments, information asymmetries, and compliance requirements constrain their capacity to prototype, validate, and scale business models (Baloyi & Khanyile, 2022 and Chaurura and Dar, 2025.). Similarly, incubator studies reveal that incubatees come with varying levels of capability; without targeted capacity-building efforts, incubators face difficulties in transitioning ideas toward sustainable businesses (Pattanasak et al., 2022).

Knowledge Sharing, Absorptive Capacity, and University Roles

Universities and their incubators serve as key sources of technical and market knowledge. However, effective knowledge transfer depends on the ability of SMEs to absorb and utilize this information, which requires sufficient absorptive capacity (Kayser et al., 2023). In South Africa's digital startup ecosystems, mechanisms such as internships, research collaborations, mentoring, and access to academic expertise can accelerate business model development. Nonetheless, these efforts must be actively brokered and aligned with the needs of the ventures to be effective (Kayser, Telukdarie & Philbin, 2023). Without intentional knowledge brokerage and learning frameworks, opportunities for knowledge exchange remain underexploited.

Program Design, Mentorship, and Stakeholder Engagement

The quality of mentorship, the alignment of program curricula with the developmental stage of ventures, and the incubator's capacity to engage key stakeholders, including investors and industry partners—are repeatedly identified as critical success factors. Evidence suggests that matching mentors with incubatees, facilitating practitioner-led workshops, and fostering stakeholder co-creation—such as securing early customer commitments and involving suppliers—significantly enhance the refinement of business models (Prijadi et al., 2023; Pattanasak et al., 2022). Programs that promote co-creation and early validations enable ventures to test assumptions and reduce uncertainties within their business models.

Monitoring, Evaluation, and Adaptive Learning

It is recommended that incubators implement comprehensive monitoring and evaluation (M&E) frameworks capable of capturing immediate outputs (such as ideas and prototypes), intermediate outcomes (including market validation and funding acquisition), and long-term impacts (such as business sustainability and employment generation). Effective M&E facilitates adaptive learning, enabling incubators to adjust their services in response to persistent capability or resource gaps identified among incubatees (Pattanasak et al., 2022 and Fei and Tee, 2024). Without such feedback mechanisms, programs risk continuing ineffective interventions.

Contextualization for KwaZulu-Natal and DUT

While general insights into incubator practices are broadly applicable, regional studies highlight the importance of adapting approaches to local contexts. Research from South Africa indicates challenges such as limited follow-on financing, infrastructure deficits, and skills shortages that are particularly relevant in KwaZulu-Natal and Durban (Baloyi & Khanyile, 2022; Kayser et al., 2023). University-based incubators like DUT's CSERI should therefore customize their program designs to align with regional market dynamics—this could include fostering local industry partnerships, implementing micro-funding stages appropriate to different development phases, and focusing on enhancing the absorptive capacity of student entrepreneurs.

Identified Gaps and Future Research Directions

This study is situated within the well-established discourse on incubation, ideation, and SME business model development. However, several important gaps remain, which this research seeks to address, thereby emphasizing its originality and contribution. Firstly, while existing literature recognizes the significance of effectuation theory in entrepreneurship (Sarasvathy, 2001; Nyoni & Moos, 2022), there is a notable lack of empirical studies that quantitatively assess its principles as applied within a rapid incubation environment. Most prior research is qualitative or theoretical, leaving a gap in statistically validating how specific effectual behaviors (such as affordable loss or flexibility) are perceived by participants and how they relate to the development of business models.

Secondly, there is a clear deficiency of research focusing specifically on social entrepreneurship incubators within the South African context, and more precisely, within KwaZulu-Natal. While broader studies on incubators (Hewitt & Janse van Rensburg, 2020; Pattanasak et al., 2022) provide general insights, they often do not account for the unique challenges faced by ventures that balance social missions with financial sustainability. The sectors represented in this study, including Green and Sustainable Business and Agriculture, highlight the need for context-specific investigations. Thirdly, a significant methodological gap is evident in the lack of longitudinal studies tracking ideation cohorts over time. Literature advocates for research that follows entrepreneurs from initial idea stages through to business model maturity (Pattanasak et al., 2022; Egbetokun, 2023). Although this study is cross-sectional, it establishes an essential baseline of perceptions immediately following the incubation experience, laying the groundwork for future longitudinal research.

Finally, there is limited understanding of how the perceived benefits of incubation support vary based on entrepreneur and venture characteristics, such as age and years in operation, within a single program. Exploring these nuances is crucial for moving beyond the criticized "one-size-fits-all" approach to incubation (Hewitt & Janse van Rensburg, 2020) and developing more tailored support mechanisms. By examining the role of ideation programs in business model development through the theoretical framework of effectuation, within the unique

setting of DUT's social entrepreneurship rapid incubator, and by analyzing differential impacts based on demographic and firm-level variables, this study directly addresses these identified gaps and offers valuable new insights to the field.

3. Research Methods

The research methodology outlined the procedures and techniques employed to collect, analyse, and interpret data for this study (Walliman, 2011:172). A quantitative research design was applied, as it enabled the collection of numerical data and analysis using scientifically based techniques (Creswell and Plano Clark, 2011:53; Muijs, 2011:3; Rasinger, 2014:10). Both primary and secondary data were used. Secondary data was sourced from textbooks, journals, reports, and online articles (Rabianski, 2003:43; Walliman, 2011:178), while primary data was collected through a structured, closed-ended questionnaire administered to the entire target population of 120 student entrepreneurs supported by DUT's Centre for Social Entrepreneurship (Driscoll, 2011:153; Rasinger, 2014:44). Due to the small population size, no sampling was required, and a survey method was employed to ensure comprehensive coverage (Sarantakos, 2005:152; Fox and Bayat, 2007:87; Davies, 2007:70). A pilot study with ten randomly selected respondents was conducted to refine the questionnaire and ensure clarity (Bless and Higson-Smith, 2004:52; Lapan and Quartaroli, 2009:87).

To ensure the reliability and validity of the research instruments, the study followed established constructs for measurement consistency and accuracy (Punch, 2005:95; Wisker, 2009:39; Punch, 2009:246; Denscombe, 2010:298; Wagner, Kawulich and Garner, 2012:80). Questionnaires were distributed via Google Forms, with participants given a one-week period to respond, which enhanced response rates while maintaining minimal researcher interference (Welman, Kruger and Mitchell, 2005:257). Collected data was processed using SPSS version 25.0, and appropriate statistical tests were applied for analysis (Bryman and Cramer, 2009:24). Ethical considerations, including confidentiality and anonymity, were strictly observed, ensuring that no identifying information was linked to respondents (Bell, 2010:45; Neuman, 2006:139).

4. Research Findings and Discussion

Table 1: Demographic variables of the participants (n = 52)

Variable	Categories	n (%)
Age	12 – 27	17 (32.7)
	28 – 43	29 (55.8)
	44 – 59	5 (9.6)
	60 – 69	1 (1.9)
Gender	Female	31 (59.6)
	Male	21 (40.4)
Industry/Sector	Agriculture and Agribusiness	10 (19.2)
	Ecommerce and Online Retail	7 (13.5)
	Education Technology (EdTech)	6 (11.5)
	Financial Technology (FinTech)	1 (1.9)
	Green and Sustainable Business	14 (26.9)
	Renewable Energy	2 (3.8)

	Technology and Software Development	5 (9.6)
	Tourism and Hospitality	7 (13.5)
Years in operation	Less than one year	8 (15.4)
	1 – 5	33 (63.5)
	6 – 10	10 (19.2)
	11 – 15	-
	16 – 20	-
	21 and above	1 (1.9)
Turnover per year (in Rands)	0 – 100	25 (48.1)
	101 - 250	11 (21.2)
	251 - 500	10 (19.2)
	501 - 750	5 (9.6)
	751 - 1 million	1 (1.9)
Number of employees	0 – 5	42 (80.8)
	6 – 10	9 (17.3)
	11 and above	1 (1.9)

Table 1 summarizes the demographic and firm-specific characteristics of the 52 survey respondents. The sample predominantly consists of entrepreneurs aged 28 to 43 years (55.8%), with a notable portion in the 12 to 27 age group (32.7%), highlighting a strong emphasis on youth entrepreneurship. The gender distribution is primarily female (59.6%). Regarding industry sectors, Green and Sustainable Business (26.9%) and Agriculture and Agribusiness (19.2%) are the most represented, which aligns with the social and environmental missions typically associated with ventures supported by a social entrepreneurship incubator. The data indicates that most ventures are in their early stages: 63.5% have been operational for between 1 and 5 years, 80.8% employ five or fewer individuals, and nearly half (48.1%) report an annual turnover of less than R100,000. This profile is characteristic of resource-constrained, emerging enterprises often targeted by incubators such as DUT CSERI, which are designed to support ventures that may lack the established structures and resources of more mature organizations (Mgweba, 2024).

Table 2: Reliability Statistics, Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett’s Test of Sphericity (BTS).

Section	Items	Cronbach's alpha	KMO value	Bartlett's Test of Sphericity			Determinant
				Approx. Chi-square	df	Sig.	
Ideation Programs and Business Models.	15	0.906	0.816	814.975	105	<0.001	1.458E-8

Table 2 presents the psychometric properties of the 15-item scale measuring the relationship between "Ideation Programs and Business Models." The Cronbach's alpha value of 0.906 indicates an excellent level of internal consistency, far exceeding the accepted threshold of 0.7 and confirming the scale's high reliability for measuring the construct (Leitão, 2022). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.816, classified as 'meritorious,' which confirms that the sample size and inter-correlations are suitable for factor analysis.

Furthermore, Bartlett's Test of Sphericity is significant ($p < 0.001$), indicating that the correlation matrix is not an identity matrix and that the factors are appropriate for analysis. These robust metrics provide a strong foundation for the validity and reliability of the findings discussed in Table 3.

Table 3: Responses on Ideation Programs and Business Models

Question	Mean (SD)	One-Sample t-Test	
		t	p-value
B1. Participation in ideation programs has proved instrumental in refining our small and medium-sized enterprise's business model.	4.75 (0.437)	28.862	<0.001
B2. Ideation programs have provided valuable insights into customer needs and preferences, thereby informing our business model development.	4.85 (0.415)	32.105	<0.001
B3. My small and medium-sized enterprise has successfully adapted its business model based on the feedback and insights gained from ideation programs.	4.25 (1.281)	7.034	<0.001
B4. Ideation programs have effectively identified new revenue streams or business opportunities for my small and medium-sized enterprise.	4.52 (0.828)	13.228	<0.001
B5. Participation in ideation programs has directly led to improvements in our small and medium-sized enterprise's value proposition.	4.69 (0.544)	22.444	<0.001
B6. Ideation programs have played a key role in facilitating the development of innovative pricing strategies or business models within my small and medium-sized enterprise.	4.65 (0.590)	20.204	<0.001
B7. My small and medium-sized enterprise has demonstrated successful pivoting or adjustment of its business model based on market feedback received through ideation programs.	4.10 (1.390)	5.687	<0.001
B8. Ideation programs have actively encouraged experimentation and iteration in refining our small and medium-sized enterprise's business model.	4.63 (0.658)	17.923	<0.001
B9. Participation in ideation programs has significantly improved our understanding of market dynamics and competitive positioning.	4.75 (0.519)	24.304	<0.001
B10. Ideation programs have provided valuable frameworks or tools for consistently evaluating and refining our small and medium-sized enterprise's business model.	4.75 (0.480)	26.291	<0.001

B11. My small and medium-sized enterprise has successfully differentiated itself from competitors as a direct result of the insights gained from ideation programs.	4.17 (1.368)	6.184	<0.001
B12. Ideation programs have effectively helped identify and mitigate risks associated with our small and medium-sized enterprise's business model.	4.65 (0.590)	20.204	<0.001
B13. Participation in ideation programs has greatly increased our small and medium-sized enterprise's resilience and adaptability in response to market changes.	4.71 (0.498)	24.759	<0.001
B14. Ideation programs have actively fostered a customer-centric approach to business model development within my small and medium-sized enterprise.	4.58 (0.637)	17.852	<0.001
B15. My small and medium-sized enterprise has experienced significant improvements in profitability or efficiency as a result of participating in ideation programs.	4.37 (1.048)	9.391	<0.001

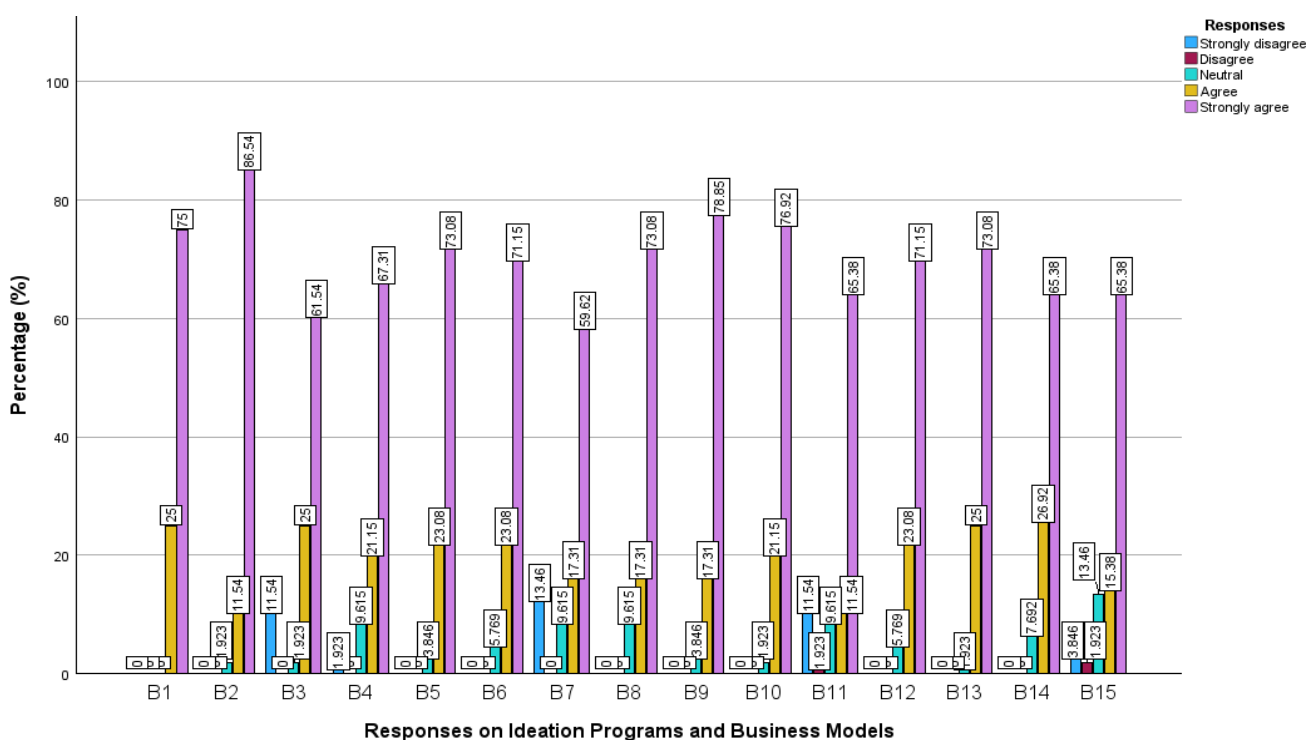


Figure 1: Responses on Ideation Programs and Business Models

Table 3 and the accompanying Figure 1 illustrate participants' perceptions of how ideation programs influenced their business model development. Overall, the mean scores for all items are notably high, with a discernible pattern emerging. The highest scores are observed for items related to gaining customer insights (B2, Mean=4.85), refining the business model (B1, Mean=4.75), and utilizing evaluation frameworks (B10, Mean=4.75). These results suggest that the programs are particularly effective in providing external market validation and structured methodologies, which are essential for moving beyond internal assumptions (Pattanasak et al., 2022). Additionally, high scores in areas related to experimentation (B8, Mean=4.63) and adaptability (B13, Mean=4.71) align with principles of effectuation theory, indicating that the incubator successfully promotes a mindset of flexibility and iterative learning—key factors in business model development within uncertain environments (De Villiers Scheepers, Gronum & Cranney, 2024).

Conversely, items addressing tangible outcomes—such as successful pivoting (B7, Mean=4.10), competitive differentiation (B11, Mean=4.17), and profitability improvement (B15, Mean=4.37)—received comparatively lower mean scores. While still positive, this suggests a slight, yet noticeable, gap between knowledge and skills acquisition and their effective application toward measurable business results. This "execution gap" is a common challenge in incubation settings, where transitioning from a validated business model to a profitable, differentiated market position requires ongoing effort, resources, and market engagement beyond the incubation period (Baloyi & Khanyile, 2022).

Table 4: Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Mean of the responses on Ideation Programs and Business Models	0.310	52	<0.001	0.786	52	<0.001
a. Lilliefors Significance Correction						

The results presented in Table 4 indicate that the data deviates significantly from a normal distribution, as evidenced by a p-value is <0.001. Given this violation of the normality assumption, it would not be appropriate to use parametric tests, which rely on normally distributed data. Instead, non-parametric tests, which do not assume normality, will be employed for further analysis to ensure the validity and reliability of the results.

Table 5: Inferential statistics were used to examine any differences between the groups in terms of the Ideation Programs and Business Models.

Variables	Test statistic	p-value
Gender	-1.136	0.256 ^a
Age group	10.033	0.018^b
Industry/Sector	3.227	0.863 ^b
Years in operation	13.228	0.004^b

- a = Independent-Samples Mann-Whitney U-Test; b = Kruskal-Wallis Test

Table 5 presents the results of inferential statistical analyses examining differences in perceptions across demographic groups. No significant differences were observed based on gender or industry sector. However, statistically significant differences were identified for age group ($p = 0.018$) and years in operation ($p = 0.004$). These findings suggest that younger entrepreneurs and those with newer ventures perceive greater benefits from the ideation programs in terms of their business model development. This can be contextualized through the lens of effectuation theory; such entrepreneurs are typically at the early stages of their entrepreneurial journey, often lacking established models and comprehensive market knowledge. Consequently, the structured ideation processes, mentorship, and tools provided by the incubator serve as a more substantial and foundational source of critical resources and cognitive frameworks (Nyoni & Moos, 2022). In contrast, more mature entrepreneurs may already possess established (though potentially suboptimal) business models, rendering them less likely to experience significant change from short-term interventions.

5. Conclusion

This study provides strong empirical evidence that ideation programs within the DUT CSERI rapid incubator are highly effective in supporting the development of business models for social enterprises. The findings indicate that these programs are particularly successful in enhancing entrepreneurs' understanding of customer needs, offering valuable frameworks for evaluating business models, and promoting a culture of experimentation and adaptability. The significant influence of age and business maturity on perceived benefits highlights the importance of tailoring program content and support mechanisms to the specific developmental stage of participants.

The results also validate the application of effectuation theory within this context, demonstrating that the incubator environment effectively encourages means-driven action, affordable loss experimentation, and flexibility—key principles for venture development amid uncertainty. For incubator managers and policymakers, the study underscores the value of integrating structured ideation activities and iterative learning cycles into support programs for early-stage social entrepreneurs. To address the gap between learning and full implementation, future program designs should incorporate ongoing post-ideation support, including connections to seed funding and sustained mentorship focused on execution. Additionally, longitudinal research tracking these cohorts would provide insight into how these positive perceptions translate into long-term venture success, growth, and social impact.

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