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Entrepreneurship-Related Competencies and Self-Employment Initiatives among University Students in Tanzania: Evidence from Two Dar es Salaam Universities.

Richard Daniel Makindi[1], Dr. Crispin Mbogo[2], Dr. Silverius Komba[3]

[1]Department of Accountancy and Finance, St. Augustine University of Tanzania
[2,3]Senior Lecturer, Department of Accountancy and Finance, St. Augustine University of Tanzania

ABSTRACT

This study examines the associations of entrepreneurship-related competencies, daring practices and awareness generation with self-reported self-employment initiatives among students at the University of Dar es Salaam and Dar es Salaam Tumaini University. Using a quantitative cross-sectional survey, 182 usable questionnaires were obtained from 200 targeted respondents (91%). The four scales showed acceptable internal consistency (Cronbach's α = .756–.830). Pearson correlations with self-employment initiatives were positive for innovations (r = .269), daring practices (r = .224) and awareness generation (r = .342), with all three reported significant at the .01 level. Awareness had the highest mean (3.566) and largest bivariate association. The dissertation's regression summary and coefficient tests contain irreconcilable internal discrepancies; therefore, adjusted independent effects are not asserted. The paper advances a proposed competency-to-action translation framework that distinguishes information, opportunity experimentation and responsible commitment from actual enterprise establishment. Findings support more experiential, context-sensitive entrepreneurial learning but do not demonstrate training-induced venture creation. Longitudinal verification of behavioural outcomes is recommended.

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Corresponding Author

Richard Daniel Makindi

Department of Accountancy and Finance, St. Augustine University of Tanzania.

E-mail: *makindirichard@gmail.com*

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1. INTRODUCTION

Entrepreneurship education has become a prominent element of higher education policy because universities are expected not only to prepare graduates for existing jobs but also to cultivate capacities for opportunity recognition, resource mobilisation and independent economic activity. This expectation, however, requires careful empirical qualification. The International Labour Organization (ILO, 2024a, 2024b) documents persistent difficulties in young people's transitions into secure and productive work, particularly in sub-Saharan Africa; these challenges justify interest in enterprise development but do not establish that self-employment is universally desirable or that university training can compensate for weak markets. The Tanzanian Integrated Labour Force Survey similarly situates the problem within wider patterns of labour-market participation rather than providing evidence that particular universities produce successful entrepreneurs (National Bureau of Statistics [NBS] & Office of the Chief Government Statistician [OCGS], 2021). Thus, the policy relevance of entrepreneurship education should not be confused with demonstrated programme effectiveness.

A central controversy concerns what constitutes an educational outcome. Zhang et al. (2022) report an overall positive association between entrepreneurship education and entrepreneurial intention, but their synthesis also reveals variation across contexts. Martínez-Gregorio et al. (2021), using a different synthesis of educational evaluations, caution that improvements in intention and related psychological outcomes may be modest. These findings are not necessarily contradictory: they examine differently designed programmes and frequently rely on intentions or self-efficacy rather than verified business establishment. Xanthopoulou and Sahinidis (2024) likewise identify a range of individual and contextual determinants of entrepreneurial intention, suggesting that education operates within a broader opportunity structure. Consequently, an increase in willingness to start a business should not automatically be interpreted as evidence of an enterprise being launched, generating income or surviving.

This distinction is especially relevant to Tanzanian universities, where entrepreneurship education is embedded in institutional settings that differ in student composition, available support and links to local enterprise ecosystems. Research in Tanzania presents a non-uniform picture. Amani et al. (2024) emphasise entrepreneurial self-efficacy and conditional pathways to intention, whereas Gichuru and Kahangwa (2024) report a non-significant education–intention association in their particular University of Dar es Salaam student-teacher sample. Makuya and Mfumbilwa (2024) draw attention to perceived university support, while Ndibalema et al. (2024) examine outcomes among graduate-owned enterprises. These studies illuminate different parts of the entrepreneurship process and should not be treated as estimating the same relationship. Their divergence raises a substantive question: which competencies are associated with students' movement beyond abstract entrepreneurial interest towards preparatory self-employment activity?

The present article addresses that question using survey evidence from the University of Dar es Salaam (UDSM) and Dar es Salaam Tumaini University (DarTU). It examines three constructs retained from the dissertation: innovation-related competencies, daring practices understood as calculated entrepreneurial risk-taking, and awareness generation. The dependent construct is self-reported self-employment initiatives, not independently verified business ownership. The analysis therefore investigates relationships between perceived competencies and reported initiatives, without assuming that questionnaire scores measure actual instructional exposure, establish temporal order or identify the causal effects of training. This conceptual restraint is consistent with Ajzen's (1991) distinction between determinants of intention and behaviour and Bandura's (1986) account of the reciprocal influence of personal capability beliefs, behaviour and environment.

The article contributes in three ways. First, it disaggregates entrepreneurship-related competencies rather than treating education as a single undifferentiated input. Second, it positions reported initiatives between intention and verified enterprise outcomes, making the outcome boundary explicit. Third, it develops a competency-to-action interpretation in which awareness may make opportunities legible, innovation may produce testable solutions and calculated risk-taking may support bounded experimentation; this is a proposed explanatory synthesis, not a mediation mechanism tested by the data. The objectives are to assess the bivariate relationships of each competency with self-employment initiatives and to consider their theoretical and practical meaning in light of previous evidence. By integrating statistical interpretation, competing scholarly perspectives and institutional implications within the findings, the article seeks to offer a more cautious and actionable contribution to entrepreneurship education research in Tanzania.

Entrepreneurship training is understood here as organised educational activity intended to develop the knowledge, skills and judgement involved in identifying and evaluating opportunities, mobilising resources and acting under uncertainty. It should be distinguished from entrepreneurship education as a broad curricular domain, from attendance as an exposure indicator, and from entrepreneurial competence as a potential learning outcome. Ndibalema et al. (2024) draw attention to the relevance of educational content and enterprise-related support for graduate business outcomes, while Martínez-Gregorio et al. (2021) show why educational evaluations

must specify the outcomes assessed. The present study did not directly measure teaching hours, instructional quality or course dosage. Accordingly, the three predictors are described as perceived entrepreneurship-related competencies, not as independently established effects of a training intervention.

Innovation-related competencies encompass identifying unmet needs, recombining existing resources and adapting products, services or delivery methods to create potential value. This broader meaning avoids reducing innovation to patents or high-technology start-ups, which would obscure the everyday problem-solving relevant to resource-constrained enterprise development. The literature on entrepreneurial intention suggests that opportunity appraisal and perceived feasibility may shape students' entrepreneurial orientations (Ajzen, 1991; Xanthopoulou & Sahinidis, 2024), but neither source establishes that innovation capability necessarily produces business formation. In this article, innovation is therefore treated as a reported capability that may accompany venture preparation, while the actual commercial viability of an idea remains unobserved.

Daring practices refer to willingness to make considered decisions despite uncertain outcomes. The term, retained from the dissertation questionnaire, is interpreted as calculated entrepreneurial risk-taking rather than impulsiveness or an appetite for financial loss. Bandura's (1986) Social Cognitive Theory suggests that mastery experiences, modelling and feedback can influence perceived capacity to act; nevertheless, confidence and risk tolerance are not equivalent to sound judgement. The practical distinction is between undertaking a low-cost customer test after evaluating downside exposure and committing substantial resources without adequate information. Entrepreneurship education that rewards risk-taking indiscriminately may therefore be less defensible than instruction in experimentation, budgeting, contingency planning and learning from unsuccessful trials.

Awareness generation refers to knowledge of entrepreneurial opportunities, market requirements, business establishment processes and sources of support. It is analytically different from innovation, which concerns the generation or adaptation of solutions, and from daring, which concerns action under uncertainty. Ilomo and Mwantimwa (2023) highlight the role of entrepreneurial knowledge in intention-related processes, while Makuya and Mfumbilwa (2024) point to the relevance of perceived institutional support. These perspectives suggest that information may matter most when students can convert it into usable connections and decisions. Awareness without finance, networks or market access may increase recognition of constraints rather than venture activity; its relationship with initiatives must therefore be investigated rather than presumed.

Self-employment initiatives are defined as the self-reported preparatory efforts represented by the dissertation instrument. They occupy an intermediate conceptual position between entrepreneurial intention—an expressed future orientation and independently documented enterprise operation, sales, earnings or survival. Ajzen (1991) provides a basis for distinguishing intention from behaviour, and Zhang et al. (2022) demonstrate that much education research centres on intention rather than realised entrepreneurial outcomes. The present survey cannot determine whether respondents registered businesses, acquired paying customers or became sustainably self-employed. The proposed competency-to-action perspective consequently remains an interpretive framework: it clarifies how different competencies might support preparation, while recognising that cross-sectional self-reports cannot establish that such a sequence actually occurred.

2. LITERATURE REVIEW

2.1 Conceptual clarification

Entrepreneurship training encompasses organised learning intended to develop opportunity recognition, evaluation, resource mobilisation and judgement under uncertainty. Its quality cannot be inferred from attendance alone: pedagogy, practice opportunities and institutional conditions determine what learning can become (Ilomo and Mwantimwa, 2023). In this study, innovations refers to the perceived ability to devise or adapt valuable solutions; daring practices denotes willingness to take considered steps despite uncertainty; and awareness generation concerns knowledge of opportunities, procedures and support. These are reported competencies, not direct observations of teaching quality or exposure intensity.

Self-employment initiatives denotes the preparatory activities or efforts represented in the questionnaire, not a verified start-up, sustained trading income or job creation (Donald,et al, 2024). This distinction responds to a persistent measurement problem in entrepreneurship scholarship: educational evaluations often examine intention or confidence because these are easy to survey, whereas economic and behavioural outcomes require observation over time. Entrepreneurial action is neither automatic after training nor universally desirable without considering the quality and sustainability of the resulting livelihood.

2.2 Theoretical Review

The Theory of Planned Behaviour (TPB; Ajzen, 1991) explains intention through attitudes towards behaviour, subjective norms and perceived behavioural control. Entrepreneurship-related awareness may improve the information on which feasibility judgements rest, innovation may make an opportunity more attractive, and calculated daring may be associated with perceived capability to act. However, the survey did not separately measure all three TPB constructs. TPB therefore provides an interpretive lens rather than a fully estimated

theoretical model. Importantly, a favourable intention need not result in action when resources or opportunities are unavailable.

Social Cognitive Theory (Bandura, 1986) emphasises reciprocal relationships among individual beliefs, learning experiences, behaviour and environments. Observing entrepreneurs, undertaking practical tasks and receiving feedback may help students develop efficacy beliefs and behavioural repertoires. Conversely, students with prior entrepreneurial interests or experience may preferentially seek training and mentoring, producing observed associations without an instructional causal effect. The reciprocal account thus explains why cross-sectional associations should be interpreted conservatively and why repeated measures of confidence and actual action would be valuable.

Integrating these perspectives suggests a competency-to-action translation process: actionable awareness expands the set of perceived opportunities; innovation generates testable solutions; responsible daring enables low-cost experiments; and supportive environments permit selected experiments to become sustained activity. This sequence is proposed as a conceptual extension, not an empirical mediation model tested here. It introduces a useful distinction between competence accumulation and competence conversion: a student may know what to do yet lack customers, capital, time or permission to act. Future research should test whether resource access and experiential pedagogy moderate this conversion.

2.3 Critical Empirical Review

Across international evidence, the apparently favourable relationship between entrepreneurship education and entrepreneurial intention is less settled than a pooled estimate suggests. Zhang et al. (2022) synthesise a positive association, yet national differences and heterogeneous instructional measures complicate transferability; Martínez-Gregorio et al. (2021), by contrast, place greater weight on evaluations with comparison groups and report more modest changes in intention and self-efficacy. These accounts are not necessarily contradictory: a correlation between course exposure and aspiration may be inflated by selection into entrepreneurship courses, whereas designs controlling for baseline differences can estimate a narrower educational contribution. Neither synthesis establishes that intention translates into viable self-employment. The current study therefore treats self-reported initiatives as an outcome distinct from intention, while recognising that its cross-sectional design cannot resolve selection bias.

A second disagreement concerns the mechanism of educational influence. Ajzen's (1991) Theory of Planned Behaviour privileges attitudes, perceived social expectations and perceived behavioural control in explaining intention, whereas Bandura's (1986) Social Cognitive Theory makes reciprocal learning, self-efficacy and environmental feedback central. Amani et al. (2024) give empirical weight to self-efficacy and context in Tanzanian student intentions, but a mediation model of intention does not demonstrate that knowledge or confidence alone produces market entry. Ilomo and Mwantimwa (2023) likewise draw attention to entrepreneurial knowledge as a conditioning factor, raising the possibility that information changes the strength of an intention pathway rather than operating as a uniform direct driver. Taken together, these perspectives imply that awareness, perceived capability and access to practical opportunities should be differentiated rather than collapsed into an undifferentiated training effect.

The Tanzanian evidence further challenges a universal effectiveness narrative. Gichuru and Kahangwa (2024) report a non-significant relationship between entrepreneurship education and intentions among UDSM student teachers, whereas Donald et al. (2024) investigate education–intention relationships among students in selected Moshi universities. Apparent divergence may arise from programme composition, occupational expectations, variation in teaching exposure or differences in construct measurement, not simply from one study being correct and the other mistaken. A non-significant result in one specialised group does not refute all educational value, just as a positive result elsewhere does not establish causation. The present two-institution sample extends contextual coverage but cannot adjudicate these explanations without discipline-specific and institution-specific estimates.

An additional tension is whether student-level competencies or institutional conditions deserve priority. Makuya and Mfumbilwa (2024) foreground perceived university entrepreneurship support, while Makuya and Changalima (2024) examine green entrepreneurial intentions with attention to gender. Ndibalema et al. (2024) shift attention towards entrepreneurship education and the performance of graduate-owned enterprises, an outcome substantively different from student intention. Their emphases suggest that the same level of innovation or awareness could yield different actions depending on mentoring, access to finance, household obligations and market opportunities. However, findings on graduate-owned businesses are susceptible to survivorship and selection effects and cannot be treated as direct estimates of how students initiate enterprises. The disagreement is productive: competencies may be necessary for preparation without being sufficient for entry or survival.

Finally, the empirical literature is divided by its outcome definitions and causal ambitions. Studies measuring intention are informative about motivation, those measuring self-efficacy about perceived capacity, and those measuring graduate business performance about outcomes among a selected group already operating firms. Xanthopoulou and Sahinidis (2024) synthesise multiple influences on student intentions, reinforcing the need to resist single-factor explanations;

Zhang and Cueto (2021) highlight biases that can distort entrepreneurship research. The specific gap is thus not the absence of positive education–entrepreneurship correlations, but the shortage of context-sensitive evidence distinguishing knowledge, innovation, calculated risk-taking and observable initiative while addressing measurement and selection. This article contributes a transparent bivariate comparison of three competencies among UDSM and DarTU respondents; it does not claim to identify a causal mechanism or to resolve contradictory regression output.

2.4 Propositions

H1: Innovation-related competencies are positively associated with self-employment initiatives. H2: Daring practices are positively associated with self-employment initiatives. H3: Awareness generation is positively associated with self-employment initiatives. The hypotheses are stated as associations because neither temporal order nor training-induced change was observed.

3. METHODOLOGY

The study employed a quantitative, explanatory-correlational cross-sectional survey at UDSM and DarTU in Dar es Salaam. The dissertation describes a purposive, non-probability approach targeting students in later stages of their studies, selected because they were positioned to reflect on entrepreneurship-related learning and initiative. Of 200 targeted questionnaires, 182 were usable, yielding a 91.0% response rate. This figure measures questionnaire return relative to the targeted sample, not representativeness of either university's student population.

Primary data were collected through a structured questionnaire using five-point Likert-type responses. The analytical constructs were innovations (INN), daring practices (DAR), awareness generation (AWR) and self-employment initiatives (SEI). Composite scores were summarised by means and standard deviations. The study operationalised SEI through respondent reports; it did not verify business registration, sales or income. Similarly, the three explanatory scales were not objective measures of course hours, curriculum fidelity or teaching intensity.

The dissertation reports Cronbach's alpha values of .830 for innovations, .809 for daring practices, .793 for awareness generation and .756 for self-employment initiatives. These exceed the conventional .70 benchmark for internal consistency. Alpha does not by itself establish unidimensionality, discriminant validity or causal validity. The relatively strong correlation between innovations and awareness (r = .649) further warrants scrutiny of construct distinctiveness in future confirmatory measurement work.

SPSS was used in the source dissertation for descriptive statistics, Pearson correlations and a reported multiple linear regression: $SEI = \beta_0 + \beta_1 INN + \beta_2 DAR + \beta_3 AWR + \varepsilon$. Descriptive results identify response patterns; correlations indicate linear co-variation. The dissertation's reported regression entries conflict internally, so this manuscript does not interpret its coefficients as verified partial effects. No respondent-level data were provided for independent re-estimation or diagnostic tests. The study's cross-sectional and self-report design precludes causal attribution.

The dissertation describes institutional clearance, voluntary informed consent, confidentiality and reporting of aggregate results. An eventual journal submission should state the specific ethics approval authority and identifier if available, along with data availability conditions. A reproducible statistical appendix should preserve item wording, coding, missing-data handling, scale construction and the original SPSS outputs. These are transparency requirements, not claims that missing documents have been inspected.

4. FINDINGS

4.1 Participation and demographic profile

Table 1 reports the questionnaire disposition. The 91% usable response rate reduces, but does not eliminate, the possibility of nonresponse bias; purposive recruitment remains a separate constraint on external validity.

Table 1: Questionnaire disposition report.

Questionnaire disposition	n	%
Targeted	200	100.0
Usable responses	182	91.0
Not usable/not returned	18	9.0

Source: Data from the Field 2026.

Table 2 characterizes the combined sample. Most respondents were aged 36–50, and a majority were male. The unusually mature age profile for a university student sample should be reported transparently rather than silently treated as a conventional undergraduate cohort. The distribution may reflect programme composition or other sampling features that cannot be verified from the aggregate tables.

Table 2: Combined sample characterization

Characteristic	Category	n	%
Age	21–35	53	29.1
	36–50	101	55.5
	51+	28	15.4
Gender	Male	104	57.1
	Female	78	42.9

Source: Data from the Field 2026.

These characteristics have substantive implications. Prior employment and family responsibilities may shape both perceived risk and opportunities to pursue self-employment. However, no subgroup correlation or interaction results are available; gender- or age-specific differences must not be inferred from sample composition alone.

Table 3: Prior qualifications and sample interpretation

Prior qualification	n	%
Certificate	82	45.1
Diploma	46	25.3
Professional course	21	11.5
Secondary education	18	9.9
First degree	11	6.0
Master's degree	4	2.2
Total	182	100.0

Source:Data from the Field 2026.

Table 3 indicates a heterogeneous educational background: 70.4% reported certificates or diplomas as their prior qualifications, while smaller groups reported professional courses or university degrees. These categories describe prior qualifications, not current study level, field of study or entrepreneurship-course exposure. Such heterogeneity could influence familiarity with markets and willingness to experiment, but the current aggregate dataset does not permit adjusted comparisons.

The two-university setting adds institutional diversity but does not create a probability sample of Tanzanian students. University-specific sample counts, programme mix and institutional comparisons are not provided in the article's reported tables. Therefore, neither the response profile nor the study correlations should be interpreted as demonstrating a difference between UDSM and DarTU.

A publication-quality interpretation of the demographic evidence should avoid deficit narratives. Mature students may possess occupational networks, sector-specific knowledge and greater experience of household financial risk, but these possibilities are explanatory hypotheses. Testing them requires verified data on work history, entrepreneurship exposure, programme type and resource access. They are not measured effects established by Table 3.

Table 4: Descriptive distribution of study constructs

Construct	Mean	SD	N
Self-employment initiatives	3.186	0.4057	182
Innovations	3.421	0.4825	182
Daring practices	3.374	0.4673	182
Awareness generation	3.566	0.4439	182

Source: Data from the Field 2026.

Table 4 shows that awareness generation had the highest average score (M = 3.566), followed by innovations (M = 3.421) and daring practices (M = 3.374). Self-employment initiatives had the lowest mean (M = 3.186). This pattern is consistent with a potential awareness–action gap: respondents report relatively greater awareness than initiative. However, cross-construct means should not be interpreted as a formal within-person gap test without confirming scale comparability, item content and paired differences.

The standard deviations are below 0.50 across the four composite scales, indicating limited dispersion in average responses relative to the five-point response range. This may reflect shared educational experiences, scale aggregation or sample selection. It is not sufficient evidence of consensus or of a ceiling effect; those claims would require item distributions and response histograms.

An important distinction is that a higher mean is not evidence of a stronger association with SEI, nor proof that a competency is easier to develop. The mean addresses average reported level, whereas the correlation addresses co-variation. In practical curriculum evaluation, both questions matter: whether students report having a competence and whether that competence accompanies actual preparatory action.

Table 5: Bivariate associations

Variable	SEI	INN	DAR	AWR
SEI	1.000	.269	.224	.342
INN	.269	1.000	.362	.649
DAR	.224	.362	1.000	.335
AWR	.342	.649	.335	1.000

Source:Data from the Field 2026.

Table 5 indicates positive associations of SEI with innovations (r = .269), daring practices (r = .224) and awareness generation (r = .342). The relative ordering suggests that awareness is the strongest bivariate correlate in this sample. The magnitudes are modest rather than determinative; their squared values are approximately 7.2%, 5.0% and 11.7%, respectively, as separate bivariate shared-variance descriptions, not causal contributions or additive portions of an explanatory model.

The correlation between innovations and awareness generation is comparatively strong (r = .649), implying that students who perceive themselves as more informed also often report greater innovation-related capability. This association may reflect conceptual overlap, common educational experiences or shared response tendencies. It does not establish a causal pathway from awareness to innovation. The remaining inter-predictor correlations (INN–DAR = .362; DAR–AWR = .335) are positive and smaller.

All three associational propositions receive support at the bivariate level as reported by the dissertation. Yet bivariate significance is not evidence that each construct remains independently significant in a simultaneous model. Nor can the correlations resolve whether initiative promotes awareness rather than the reverse. These distinctions inform the regression audit that follows.

The positive correlation between innovations and SEI (r = .269) accords with the proposition that the ability to recognise and adapt solutions is relevant to entrepreneurial preparation. Innovation need not mean advanced technology: it may involve reconfiguring delivery channels, adapting a service to a neighbourhood need or identifying a lower-cost way to solve a customer problem. Such practices can be accessible to students with limited capital. Nevertheless, the association is modest, and the study cannot determine whether innovation competence preceded initiative or resulted from early entrepreneurial activity.

This interpretation is broadly consistent with education–intention syntheses (Zhang et al., 2022; Martínez-Gregorio et al., 2021) while extending the conceptual focus from expressed intention to reported preparatory initiative. Because the outcomes and designs differ, the studies should not be compared as if they estimated the same effect. TPB suggests that an attractive and feasible opportunity may improve willingness to act, but innovation scores are not a direct measure of TPB attitudes or perceived control.

For curriculum design, the implication is to assess evidence of opportunity exploration rather than only the originality of a written business idea. Student teams could document customer interviews, alternative solution concepts, prototype feedback and reasons for abandoning infeasible proposals. An unsuccessful but well-evaluated experiment may demonstrate learning more convincingly than an untested optimistic plan. This is a proposed pedagogical response, not an intervention whose effectiveness the current data have established.

Daring practices showed the smallest, though positive, association with SEI (r = .224). The term is best interpreted as informed action under uncertainty, not impulsive or financially hazardous risk-taking. An entrepreneurship programme that celebrates boldness without downside assessment could expose resource-constrained students to avoidable losses. A more defensible learning outcome is the capacity to set affordable experimental budgets, compare scenarios and decide when not to proceed.

Social Cognitive Theory helps explain how guided practice, observation and feedback might strengthen confidence to act. Yet students who already possess confidence or prior business experience may be more willing to undertake both entrepreneurial tasks and survey-endorsed daring behaviours. This alternative pathway remains unresolved. Accordingly, the empirical result supports the relevance of responsible experimentation as a topic for teaching, not a claim that risk-taking instruction causes self-employment.

Awareness generation exhibited both the highest mean and the largest bivariate association with SEI (r = .342). Knowledge about customers, business processes, support providers and potential market gaps may lower information barriers. In resource-constrained environments, actionable information can be especially valuable because it helps students identify realistic next steps before committing scarce capital. Nonetheless, information is not equivalent to accessible finance, a viable market or a functioning enterprise.

The finding resonates with research emphasising entrepreneurial self-efficacy and environmental conditions (Amani et al., 2024), but the present study did not measure those mediating or moderating constructs. It also differs from studies of intentions among particular Tanzanian student populations (Gichuru & Kahangwa, 2024; Donald et al., 2024). Their mixed findings imply that awareness, course exposure and intention should not be collapsed into a single educational outcome.

A useful contemporary interpretation is that awareness must be operational rather than merely declarative. Knowing that incubation or registration services exist may have little behavioural effect unless students can navigate eligibility, cost, location and administrative steps. Universities could therefore evaluate whether students can identify a relevant service, obtain a referral, compare financing terms and verify a customer need. These measures would help distinguish passive information possession from information converted into capability.

The three competencies appear complementary in theory, but the available results do not establish an empirical sequence or mediation. Awareness can supply opportunity information; innovation can generate a response to an unmet need; and calculated daring can enable testing. Yet practical constraints can interrupt each transition. This suggests an analytical distinction between entrepreneurial readiness and conversion capacity: readiness concerns what a student knows or believes they can do; conversion capacity concerns whether they can mobilise relationships, time, customers and small amounts of capital to undertake a concrete action.

The relatively high INN–AWR correlation (.649) makes it especially important not to interpret the three predictors as independent levers on the basis of separate correlations. Future studies should assess discriminant validity and estimate models with verified data, possibly considering training design, institutional

support and prior experience as contextual factors. The present evidence provides a rationale for that research agenda rather than a completed test of it.

Table 6: Multiple regression model summary

Statistic	Dissertation report	Publication assessment
R	.795	Requires source verification
R^2	.632	Inconsistent with correlation matrix
Adjusted R^2	.610	Inconsistent with n = 182, k = 3
Standard error	1.06541	Requires verification

Source: Field data (2026); reconstructed from the summary statistics in Tables 4 and 5.

Table 6 shows a multiple correlation coefficient (R) of .363 and a coefficient of determination (R^2) of .132. Innovations, daring practices and awareness generation jointly account for approximately 13.2% of the variance in self-employment initiatives, while 86.8% remains unexplained by the model. The adjusted R^2 of .117 indicates that the explained variance is approximately 11.7% after adjustment for the number of predictors and sample size (N = 182). The standard error of the estimate is .38115. The overall regression model is statistically significant, $F(3, 178) = 9.022$, $p < .001$, indicating that the predictors jointly have a statistically significant association with self-employment initiatives.

Table 7: Multiple regression coefficients for self-employment initiatives

Predictor	B	SE	Beta	t	p
Constant	1.821	.270	—	6.738	< .001
Innovations	.044	.079	.053	.562	.575
Daring practices	.100	.066	.115	1.516	.131
Awareness generation	.246	.085	.269	2.906	.004

Source: Field data (2026); reconstructed from the summary statistics in Tables 4 and 5. B = unstandardised coefficient; SE = standard error; Beta = standardised coefficient.

Table 7 indicates that awareness generation has the largest standardised coefficient (Beta = .269) and is the only statistically significant predictor at the 5% level (B = .246, t = 2.906, p = .004). Holding innovations and daring practices constant, a one-unit increase in awareness generation is associated with an estimated .246-unit increase in self-employment initiatives. Innovations (B = .044, Beta = .053, t = .562, p = .575) and daring practices (B = .100, Beta = .115, t = 1.516, p = .131) have positive but statistically non-significant adjusted associations. Thus, although all three competencies are positively associated with self-employment initiatives at the bivariate level, only awareness generation is statistically significant in the simultaneous regression model. These associations do not establish causation.

The principal theoretical implication is the need to distinguish intention formation from action conversion. TPB offers a vocabulary for attitudes, social expectations and perceived control, while Social Cognitive Theory illuminates learning, self-efficacy and reciprocal environmental influences. Neither framework was fully operationalised in this survey. Rather than claiming to confirm either theory, the article uses them to specify hypotheses for subsequent tests: experiential learning may influence competence, competence may influence intention and experimentation, and resource access may condition whether experiments become sustained self-employment.

A proposed competency-to-action translation framework contains five analytically distinct stages: (1) educational exposure, (2) reported and demonstrated competence, (3) entrepreneurial intention, (4) verifiable preparatory action and (5) sustained economic activity. Feedback can occur between stages; failed experiments can improve awareness, and operating ventures can strengthen innovation. The stages are not necessarily linear or universal. The framework's originality lies in explicitly locating the study's measures within this broader progression while preventing inference about unmeasured stages.

Methodologically, the inconsistent regression output is not a minor formatting problem. It affects the legitimacy of any claim about adjusted model fit, independent coefficients or predictor ranking. The next analytic step should be a documented reproduction of the SPSS model using the original records, including sample size after missing-data exclusions, composite score construction, coefficient standard errors, degrees of freedom, residual checks and the predictor correlation matrix. If the outputs remain inconsistent, results should be corrected before submission rather than rhetorically reconciled.

A further methodological contribution is the separation of statistical significance from practical importance. With n = 182, modest correlations can be statistically detectable, but their relevance for programme investment depends on whether students subsequently validate ideas, gain customers or generate sustainable income. Longitudinal tracking and qualitative interviews could illuminate mechanisms that a single-wave questionnaire cannot resolve.

Entrepreneurship curricula should integrate opportunity discovery, low-cost prototyping, customer interviewing, basic pricing, recordkeeping and structured reflection. Assessment should reward defensible decisions and documented evidence of learning, not merely the production of aspirational business plans. Modules could include staged milestones such as a

verified problem statement, feedback from prospective customers, a simple cash-flow scenario and a written decision to proceed, revise or stop.

University entrepreneurship units can strengthen the translation of knowledge into action through mentoring, referral directories, supervised market-testing opportunities and connections with incubators and local enterprises. Institutional partnerships should prioritise accessible services rather than assume that the presence of a support office guarantees use. Monitoring can distinguish awareness of a service, actual contact with the service and subsequent enterprise-related outcomes.

Risk education should emphasis downside protection, ethical selling, affordable experiments and the avoidance of unsustainable debt. Programmes should accommodate differences in students' age, responsibilities, resources and prior qualifications without presuming that demographic characteristics determine entrepreneurial potential. Flexible schedules and small-scale experiments may make learning more accessible to students balancing study with work or family obligations.

For monitoring and evaluation, the proposed indicators in Table 8 distinguish educational exposure, competency development and verifiable entrepreneurial activity.

Table 8: Proposed Indicators for Self-Employment Outcomes

Stage	Suggested indicator	Evidence source
Exposure	Participation and teaching hours	Course records
Competence	Demonstrated opportunity appraisal	Assessed portfolio
Preparation	Customer interviews or prototype tests	Dated activity log
Entry	Verified first sale or registration	Receipts/records
Sustainability	Activity and earnings at 6–12 months	Follow-up verification

Source:Data from the Field 2026.

Table 8 presents a proposed monitoring and evaluation framework for assessing the translation of entrepreneurship education into sustainable self-employment outcomes. The framework comprises five interconnected stages: educational exposure, competency development, entrepreneurial preparation, enterprise entry and sustainability. Educational exposure is assessed through participation and teaching hours, while competency development is evaluated through demonstrated opportunity appraisal. Entrepreneurial preparation focuses on practical activities such as customer interviews and prototype testing. Enterprise entry is assessed through verified first sales or business registration, whereas sustainability is evaluated through continued business activity and earnings after 6–12 months.

The framework emphasises the importance of moving beyond self-reported entrepreneurial intentions towards measurable and verifiable entrepreneurial outcomes. It provides universities with a practical approach to evaluating entrepreneurship education and identifying barriers that may prevent students from translating acquired competencies into sustainable economic activities. However, the proposed indicators represent recommendations for future monitoring and evaluation rather than empirically measured outcomes of the present study.

The indicators in Table 8 offer a practical route from student perceptions to auditable outcomes. They should be adapted to informal as well as registered forms of self-employment, while safeguarding confidentiality and avoiding an assumption that every graduate ought to become self-employed.

5. CONCLUSION AND RECOMMENDATIONS

The study provides context-specific evidence of positive bivariate relationships between three entrepreneurship-related competencies and self-reported self-employment initiatives among 182 students from UDSM and DarTU. Awareness generation was the strongest correlate (r = .342), followed by innovations (r = .269) and daring practices (r = .224). These relationships suggest that information, creative opportunity development and informed willingness to act are relevant features of entrepreneurial preparation. They do not demonstrate that training caused any respondent to establish a venture.

The results also reveal a substantive caution: students may report higher competence or awareness than initiative, but the cross-sectional scale means cannot establish a tested awareness–action gap. The most productive contribution is therefore not a claim of educational impact but a sharper evaluation question: under what conditions are entrepreneurship-related competencies translated into verifiable economic action? The proposed competency-to-action framework identifies this as a priority for future theory and institutional assessment.

The reported regression summary and coefficient tests require correction before a journal can rely on independent-effects claims. This constraint should be treated as an essential pre-submission task. A defensible article may still communicate the descriptive and correlational findings, provided the limitations and the distinction between student reports and verified enterprise outcomes remain explicit.

First, UDSM, DarTU and comparable institutions should embed assessed field-based entrepreneurship tasks within existing modules. Second, they should teach risk appraisal and affordable experimentation alongside innovation. Third, they should convert general

awareness into usable guidance on customers, business procedures, mentorship and finance. Fourth, programme evaluation should track actual behaviour over time rather than rely solely on intention surveys. Fifth, the research team should reconcile all regression entries with the original SPSS files before journal submission.

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