The Influence of Motivation on the Impact of the Climate Village Program Implementation (A Case Study of Thematic Community Service Program in Climate Villages)

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Abstract. Motivation serves as a driving force for people to participate in implementing every program. This research aims to analyse the influence of motivation on the impact of the Community Service Program (KKN) themed on climate village development. The data analysis method employed in this research is a quantitative approach utilising survey techniques. The research respondents consisted of 92 students, selected through a census. The location selection was intentional, specifically in Gondangrejo District, Karanganyar Regency, Central Java, which became the site for the Community Service Program (KKN) with the theme of Climate Village Development. Motivation is examined through three primary dimensions: existence motivation, relationship motivation, and self-development motivation. Meanwhile, the program's impact on students is examined based on indicators of knowledge, understanding, application, analysis, synthesis, and evaluation. Next, the data were analysed using multiple linear regression analysis. The research results show that the levels of existence and development motivation are classified as very high, while relational motivation falls into the high category. The impact of the community service program results in a significant increase in knowledge, understanding, and synthesis (very high), as well as application, analysis, and evaluation, all in the high category. Existential motivation (X1) and social interaction (X2) have a significant influence on the impact of the climate village program, whereas motivation for development (X3) does not.

1 Introduction

Climate change is one of the international concerns outlined in the 13th Sustainable Development Goal. The Climate Village Program (Indonesian: Program Kampung Iklim, hereafter referred to as Proklim) is Indonesia's national initiative to enhance climate change resilience and mitigation at the community level. Since its initiation in 2012, ProKlim in Indonesia has been implemented in 10,113 out of 20,000 targeted locations as of 2024. The

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failure to achieve this target is due to the implementation of ProKlim facing major challenges in terms of community understanding and participation limited resources, limited funds, lack of institutional coordination, inadequate monitoring and evaluation, and weak long-term sustainability support from the community and government. Strengthening communication and dissemination of ProKlim, increasing capacity, and providing ongoing support from the government are essential to the successful and sustainable operation of this program.

The attempt of mitigating and adapting to climate change can be continued through activities to reduce the use of carbon fuels, avoid burning wood, reduce the use of fluorinated gas, utilize climate and weather information, increase body resistance, create water infiltration, implement intercropping systems, improve irrigation systems, and other actions. In addition, in response to the increasing carbon emissions from industrial products and forest fires, the role of local communities in environmental management is crucial, as are legal regulations governing efforts to mitigate and adapt to climate change. Collaboration between stakeholders is necessary to enhance the implementation of ProKlim, one of which involves partnerships between the Environmental Service at the district level and campuses. The involvement of universities in climate-conscious initiatives and policy advocacy, as demonstrated by campuses in the United States, illustrates how institutional policy reforms can serve as catalysts for broader societal transformations, including the advancement of climate village programs.. The campus has a strategic program to assist the community through community service programs, such as the Community Service Program (Indonesian: Kuliah Kerja Nyata, hereafter referred to as KKN), one of the three pillars of higher education. Through KKN, students not only develop social and personality competencies, but also contribute to community development and empowerment in various fields, including the thematic KKN of Climate Village Program.

KKN provides students with learning experiences through community empowerment activities, which are part of the academic community's concern in addressing community needs through community development and empowerment, addressing dynamic problems and challenges in the field.. The Community Service Program (KKN) is a model of community service that focuses on educational empowerment, supporting students' understanding in various fields.. The successful implementation of Thematic KKN activities for students is significantly influenced by the resources provided.. The success of a work program not only depends on the students' ability to study a problem encountered, but is also determined by the extent to which the community engages or participates. Students' motivation in academic activities (including KKN) is influenced by two factors: intrinsic factors (intelligence, attention, interest, motivation, and maturity), and extrinsic factors, including curriculum, schedule, relationships with lecturers, and relationships with other students]. Action research involving students in strengthening the implementation of ProKlim through the KKN program has not been conducted previously. Therefore, research on student motivation to participate in the ProKlim thematic KKN is important. Based on this background, this study aims to analyse how students' motivation to join the ProKlim thematic KKN activities influences the impact of ProKlim.

2 Materials and Methods

The study used a descriptive quantitative approach. Data were collected through questionnaires, observations, and documentation. The population in this study consisted of students affiliated with the thematic KKN activities of Climate Village Program in the period of January-February 2025 in 5 (five) villages in Gondangrejo Sub District, Karanganyar Regency, Central Java Province. The five villages, being the locations of KKN, include Karangturi, Kragan, Wonosari, Bulurejo, and Tuban Villages. The selection of the area was intentional, as it was the site for the implementation of ProKlim's thematic KKN activities at

Sebelas Maret University, in collaboration with the Environmental and Forestry Service of Central Java Province. The communities in the five villages were identified as having carried out local actions in adaptation and mitigation, as well as social institutions responding to climate change. KKN activities were carried out in the village aiming to strengthen local actions and to provide education and empowerment through climate change mitigation and adaptation activities having not been carried out such as: utilization of organic waste, local food development, fisheries and plantation development, strengthening local institutions, Health (toddlers, adolescents, and the elderly) and other activities according to the respective villages' needs. The sample in the study was collected as a whole using a census method from 92 student participants of KKN ProKlim, where each village had 2 KKN ProKlim groups, with a total of 8-10 students per group. A census technique was employed to encompass the entire population, thereby enabling statistical analysis to represent the overall field conditions accurately. Data were collected through a questionnaire distributed via Google Forms, in which each item was structured using a five-point response scale that allowed respondents to select the option most reflective of their actual circumstances. To determine the influence of students' motivation on the impact of ProKlim, a multiple linear regression analysis was conducted.

3 Results and Discussion

3.1 Students' motivation in proklim-thematic KKN activities

Alderfer's motivation theory (ERG) is relevant in understanding and improving the students' learning motivation. Three aspects of needs, including existence, relationships, and growth, are interrelated and must be met in a balanced manner so that students' learning motivation remains high and sustainable. The students' learning motivation requires ongoing psychological, material, and academic support, as well as pedagogical training for lecturers, who serve as facilitators of student learning [1,2]. A flexible learning environment, social support, and opportunities for self-development are also crucial in meeting the three needs outlined in ERG theory and in enhancing students' learning motivation [3,4]. The students' level of motivation in KKN ProKlim activities is presented in Table 1.

Based on the data presented in Table 1, the majority of students' motivation to participate in KKN ProKlim falls into the very high category for existence and growth, and into the high category for relatedness motivation. The "Existence" motivation to participate in KKN ProKlim activities is supported by the reason that the KKN location is still reachable from the campus (although it is located in a different district from the campus location) and the specific KKN ProKlim program so as to convince students that the cost of supporting the KKN program (food and accommodation costs during KKN) will not increase during the implementation of the KKN activities. The KKN ProKlim program partnership is also supported by the village government, which provides free accommodation for KKN student groups. The "Relatedness" motivation falls into a high category because students believe that the Climate Village program is supported by mentoring provided by research groups with competent lecturers in the field of climate and rural community empowerment. The KKN group was also established by student initiators (rather than being randomly assigned by the KKN organiser), so that from the beginning, the members of the KKN group knew each other, making the group more solid and providing convenience in implementing the work program. In terms of "Growth" motivation (very high category), the motivation of students to join KKN ProKlim is because, through KKN ProKlim, the students also gain other advantages, such as the recognition of courses for ecological and environmental literacy (3 credits), digital literacy (3 credits), socio-cultural literacy (3 credits), and physical-mental

health (3 credits) courses so that overall they gain an additional 12 credits issued by the Karanganyar Regency Environmental Service and in line with the independent campus curriculum. The students believe that this recognition will enhance their experience in addressing environmental issues, particularly climate change.

Table 1. Students' level of motivation in KKN proklim activities.

Category	Score	Frequency	Percentage (%)
Existence			
Very high	6.6-8	57	61.9
High	5.1-6.5	29	31.5
Low	3.6-5	6	6.6
Very Low	2-3.5	0	0
Total		92	100
Relatedness			
Very high	9.86-12	42	45.6
High	7.6-9.85	47	51.1
Low	5.26-7.5	3	3.3
Very Low	3-5.25	0	0
Total		92	100
Growth			
Very high	6.6-8	48	52.2
High	5.1-6.5	23	25
Low	3.6-5	21	22.8
Very Low	2-3.5	0	0
Total		92	100

3.2 The impact of proklim-thematic KKN

The Climate Village Program (ProKlim) has established guidelines regarding the form and aspects of its activities, which involve climate change adaptation and mitigation practices, as well as the institutions supporting these adaptation and mitigation efforts. The climate change adaptation activities include the development of organic farming, food gardens [5,6] water source management, forest and ecosystem restoration.. Climate change mitigation activities are manifested in waste management, the utilisation of renewable energy (e.g., biogas made from manure), and incentives for environmental care activities.. Meanwhile, ProKlim institutional activities include strengthening local community institutions that support ProKlim. Institutions play a central role in the successful Climate Village Program (ProKlim) in Indonesia, aiming to build climate-resilient communities through community-based adaptation and mitigation. Strengthening local institutions, such as Village-Owned Enterprises (BUMDes), farmer groups, and community institutions, has been evident in managing resources, internalising sustainability values, and encouraging active citizen participation in various climate actions and environmental management,.

Before being deployed to the village where the KKN is held, the students participating in the ProKlim KKN program need to understand what ProKlim is, what the character of the community is, the characteristics and culture of the village, and to prepare work programs and other related social aspects so that at the beginning students receive material supplies from the Environmental Service, Supervising lecturers, forestry extension workers, and KKN implementing units, and discuss with the village head and community leaders. The students' good understanding at the beginning will certainly yield the expected positive outcomes in the implementation of the ProKlim KKN program. To measure this impact, Bloom's taxonomy approach is used. The learning objective framework of KKN ProKlim is based on

the cognitive level expected to come from KKN participant students. This taxonomy divides the thinking process into six levels, starting from the most basic such as knowing, understanding, applying, analysing, evaluating, to creating at the highest level [7,8]. Table 2 below presents the impact of KKN ProKlim on knowledge, understanding, application, analysis, synthesis, and evaluation of KKN ProKlim.

Table 2. Indicators for measuring the impact of KKN proklim with bloom's taxonomy approach.

Indicator of Impact Measurement	Criteria	Score	Frequency (people)	Percentage
Knowledge	Very high	6.6-8	55	59.8
	High	5.1-6.5	36	39.1
	Low	3.6-5	1	1.1
	Very Low	2-3.5	0	0
	Total		92	100
Understanding	Very high	9.75-12	60	65.2
	High	7.6-9	32	34.8
	Low	5.23-7.5	0	0
	Very Low	3-5.25	0	0
	Total		92	100
Implementation	Very high	26.1-32	21	22.8
	High	20.1-26	69	75
	Low	14.1-20	2	2.2
	Very Low	8-14	0	0
	Total		63	100
Analysis	Very high	3.26-4	45	48.9
	High	2.6-3.25	47	51.1
	Low	1.76-2.5	0	0
	Very Low	1-1.75	0	0
	Total		692	100
Synthesis	Very high	6.6-8	52	56.5
	High	5.1-6.5	38	41.3
	Low	3.6-5	2	2.2
	Very Low	2-3.5	0	0
	Total		692	100
Evaluation	Very high	26.1-32	43	46.7
	High	20.1-26	49	53.3
	Low	14.1-20	0	0
	Very Low	8-14	0	0
	Total		92	100

Table 2 shows that the impact achieved belonging to very high category occurred in the aspects of knowledge, understanding, and synthesis. This implies that briefing, discussion, and implementation activities and experience with the implementation of community empowerment activities through KKN ProKlim improve the students' knowledge and understanding regarding the background of the emergence of ProKlim, types and forms of adaptation and mitigation programs for climate change, classes in ProKlim, and how to encourage communities or community groups to apply for being climate villages. Through the KKN program, students can identify activities in the community that have and have not led to ProKlim activities. Figure 1 below illustrates an example of the KKN ProKlim work program implemented by students alongside villagers.

Fig. 1. Aquaponics education in a female farmer group and vertical garden education in elementary school students

The impact achieved in the implementation, analysis, and evaluation aspects of the KKN ProKlim activities falls into a high category. This achievement is influenced by external factors, for example, in implementing the KKN work program (as exemplified in Figure 1), it is highly influenced by the participation of partner communities (members of female farmer groups, school students), so that students do not work alone. The engagement of partner communities is one of the key factors in the successful implementation of the climate village program, encompassing aspects of activity evaluation, planning, and implementation. In the synthesis aspect, students excel in creating activities beyond ProKlim (ProKlim's supporting program). Thus, the KKN ProKlim activities are manifested not only in adaptation, mitigation, and institution-related activities related to climate change, but also in other valuable activities, such as continuing education, counselling on the wise use of social media, and anti-bullying campaigns. There are even student groups in other villages that add educational activities on the dangers of online gambling and online loans because they have disturbed the community. This means that ProKlim is the primary work program, but it still provides flexibility for students to create other programs tailored to the community's needs or their own competencies. Thus, overall, the impacts of the KKN ProKlim program mainly belong to the high/impactful category (53.3%) and the rest belong to the very high/very impactful category (as shown in Table 3).

Table 3. Distribution of respondents based on the impact achieved from the KKN proklim program.

Criteria	Score	Frequency (people)	Percentage (%)
Very high	78.1-96	43	46.7%
High	**60.1-78**	**49**	**53.3%**
Low	42.1-60	0	0.0
Very low	24-42	0	0.0
Total		92	100.0

3.3 The influence of students' motivation on the impact of KKN proklim

Motivation has a significant impact on the effectiveness of a program, whether in the context of education, training, or organisational development. Studies show that high motivation consistently improves the performance, productivity, satisfaction, and engagement of program participants 9,10,11,12]. Even the success and impact of the program are highly influenced by how participant motivation is built and maintained during its implementation [9-13]. The impact of the KKN ProKlim program in the form of increased knowledge, understanding, application, analysis, synthesis, and evaluation of climate village programs (Bloom's taxonomy approach) is influenced by the students' motivation to join KKN ProKlim (Existence, Relatedness, and Growth). The influence of motivation contributes to the impact of ProKlim by 30.8%, while the remaining impact is attributed to other factors excluded from the study (presented in Table 4).

Table 4. Output model summary of the influence of students' motivation on the impact of KKN proklim.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.555[a]	.308	.285	11.50994
a. Predictors: (Constant), x3, x1, x2				
b. Dependent Variable: y				

Based on the results of Model Summary, it can be seen that the R Square (coefficient of determination) value of 0.308 means that around 30.8% of variation or changes occurring in y variable can be explained by variations in X1 (existence), X2 (Relatedness), and X3 (Growth) simultaneously. This value indicates that the contribution of the three variables in explaining Y is quite moderate. However, the remaining 69.2% is attributed to other factors excluded from the model. The Adjusted R-Square value of 0.285 is slightly lower than the R-Square, which is commonly observed due to adjustments made to the number of predictor variables in the model. This confirms the statement [14,15] that motivation influences the impact of the KKN ProKlim program. However, if analysed partially, the aspects of motivation that significantly influence the impact of the program are only Existence (X1) and Relatedness (X2), while Growth motivation (X3) does so insignificantly (Table 5).

Table 5. Analysis of the influence of motivation on the impact of the KKN proklim program.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.972	7.531		1.988	.050
	x1	3.113	.894	.336	3.482	.001
	x2	1.624	.711	.240	2.283	.025
	x3	1.390	.939	.147	1.481	.142

Based on the table of Coefficients, the Intercept (Constant) of 14.972 shows that if all independent variables (X1, X2, X3) are zero, the y value will be estimated at 14.972. The t-value of 1.988 with a significance level of 0.050 is right on the threshold of significance ($\alpha = 0.05$), so statistically, it can be said that this constant is almost significant. X1 has a coefficient value of 3.113, meaning that each one unit increase in X1 will increase the y value by 3.113, ceteris paribus. The t-value of 3.482 and the significance of $p = 0.001$ indicate that the influence of X1 is highly statistically significant at a confidence level of 99%. This implies that X1 is a strong predictor in this model. X2 has a coefficient of 1.624, meaning that each one unit increase in X2 will increase y value by 1.624, ceteris paribus. The t-value of 2.283 with $p = 0.025$ also indicates that the influence is statistically significant (since $p < 0.05$). Thus, X2 also plays an important role in influencing y. X3, with a coefficient value of 1.390, appears to have a positive influence on y; however, the p-value of 0.142 indicates that this influence is not statistically significant. This means that although X3 appears to contribute mathematically to the model, its statistical contribution to changes in y cannot be ascertained with certainty. The t value of only 1.481 confirms this conclusion. This result indicates that the two motivational components, namely X1 and X2, have a real and significant influence on the variable y. This could reflect, for example, that certain aspects of motivation (e.g. intrinsic and extrinsic motivation—if assumed) do play an active role in influencing the output or results measured in y variable. However, the motivational component represented by X3 does not make a significant contribution to changes in y, although theoretically it may be considered important. This could indicate that in a particular context or population studied, aspect X3 (growth) is less relevant or its influence is disguised by other variables excluded from the model.

The achievement of knowledge, understanding, application, analysis, synthesis, and evaluation related to ProKlim owned by students is possibly influenced by the KKN ProKlim program factor, tending to be clear and rigid so that it does not incur additional costs, and the presence of teammates already knowing each other further strengthens the understanding and achievement of ProKlim from the KKN activity. This finding aligns with the results [39-45] that both intrinsic (basic personal needs and financial ownership) and extrinsic factors (the presence of friends who are known and a solid team) also influence motivation. Ultimately, motivation also influences the achievement of the program's impact or benefits. Mentoring through the ProKlim thematic KKN approach is more effective than interventions by other actors, such as the Environmental Agency or external facilitators, due to its higher intensity and sustainability. Within this program, students reside and work intensively in the community for 45 days, facilitating the direct resolution of challenges encountered in ProKlim implementation and allowing the program to be systematically redeployed in the same location each semester. Moreover, this approach yields positive outcomes for participating students, including enhanced understanding of climate change, awareness of necessary adaptation and mitigation measures, and a greater overall sensitivity to environmental issues.

4 Conclusion

Students' motivation to join KKN ProKlim influences the impact of the Climate Village KKN program on the aspects of knowledge, understanding, application, analysis, synthesis, and evaluation of the ProKlim program. To some extent, only existence and relatedness motivations have a significant influence, while growth motivation has no influence. Collaboration between the government and the Environmental Services Agency at the district and university levels is essential to expand the reach of the KKN ProKlim. Regular strategic discussions at the start of each semester can support the continuous improvement of the program's quality and effectiveness.

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