

Original Article

# Assessing the Social Impact and Community Engagement of the Micro Urban Food Forest Campaign at Masagi Koffee : A Mixed-Methods Study

<sup>1</sup>Rafi Pratama, <sup>2</sup>Wawan Dhewanto

<sup>1</sup>School of Business Management, Institut Teknologi Bandung, Indonesia.

Received Date: 24 July 2024

Revised Date: 08 August 2024

Accepted Date: 12 August 2024

Published Date: 15 August 2024

**Abstract:** This research conducts an SIA of the effectiveness of the Micro Urban Food Forest Campaign at Masagi Koffee, Bandung, Indonesia, in enhancing environmental sustainability and community involvement. This research uses a mixed-methods approach by integrating qualitative interviews with key stakeholders and quantitative survey data analyzed by logistic regressions. The findings imply that, while the AAF initiative of inculcating environmental awareness and promoting sustainability had been a moderate success amongst the participants; however, there are problems in attaining consistent community participation. Logistic regression analysis outlined the awareness and knowledge as significant predictors of achievement of the sustainability practice and hence quoted that there is a need for targeted strategies for raising behavioral change. The results are somewhat constrained but indicate that this campaign is a vehicle of potential generation for models of urban greening initiatives that offer valuable lessons on how to engage a community toward a long-term impact on the environment. The results can definitely inject further life into the larger discourse on urban sustainability by illustrating how to make future social impact assessment exercises more empirically driven.

**Keywords:** Community Engagement, Social Impact Assessment, logistic regression, urban sustainability, environmental awareness, Micro Urban Food Forest.

## I. INTRODUCTION

Urban sustainability has become crucial because of the rapid environmental degradation and urbanization process taking place within the cities (Chiesura, 2004; Haase, Larondelle, Kabisch, & Kroll, 2014). In an environment where cities grow as mushrooms, the necessity of green spaces that can secure the well-being of the environment as well as the social aspects becomes pressing (Clark & Nicholas, 2013). It is a good example of how urban greening can be used in community engagement and can be likened to the case of the Micro-Urban Food Forest Campaign at Masagi Koffee, in Bandung, Indonesia.

The goal of the campaign is the creation of small-scale, biodiverse urban forests that bring about ecological goods such as better air quality, carbon sequestration, and biodiversity. Besides the ecologically oriented aims, the campaign is also oriented toward creating a sense of community among participants, that is, collective action toward sustainability, fostering a sense of community. The environmental outcomes of such initiatives are one thing, but their social impacts are another. Knowledge about how such projects affect community behavior, awareness, and participation is a must in defining long-term success (Vanclay, 2003; Esteves, Franks, & Vanclay, 2012). This study conducts a Social Impact Assessment of the Micro Urban Food Forest Campaign to gauge its efficacy in promoting sustainability practices and the involvement of the local community.

This research combines mixed methods in its design by using both the quantitative data from the survey and qualitative conversations with key stakeholders analyzed by logistic regression. According to Creswell, 2014, the study identifies key drivers of successful sustainability practices and actionable insights that would enhance impact in similar urban greening initiatives.

## II. LITERATURE REVIEW

Urban sustainability is a multidimensional concept, which encompasses environmental, social, and economic dimensions. It embodies the integration of the various ecological interventions in urban development that would ensure the long-term viability and resilience of the cities (Chiesura, 2004; Haase et al., 2014). Expedition on greening projects, such as the creation of urban food forests, is one of the most popular ways to grow such sustainability as it considers producing ways



in enhancing biodiversity, improving air quality, and producing social cohesion (Clark & Nicholas, 2013; Jacke & Toensmeier, 2005).

SIA has become one of the important tools at one's disposal while estimating the social impacts of development projects, which extends to the sphere of urban greening. It is a structured way of assessing the negative and positive social impacts a project could have on society, with a view to promoting social well-being while minimizing negative impacts. SIA is important because of the ability of the process to involve stakeholders and incorporate perspectives in a way that allows for the community participation that has been integral to the success of sustainability projects (Arnstein, 1969; Wals, 2007).

The level of engagement an urban greening initiative receives would be the sole determinant of its success. In fact, active participation from the local communities can increase the relevance of the project and bring forth a sense of ownership and responsibility among the participants. However, there are a number of obstacles that hinder community engagement in the process, such as logistics, lack of awareness, and social norms. These are the barriers that need to be addressed in order to enhance effectiveness in urban greening.

Logistic regression has been used many times in efforts to identify factors that determine the success of sustainability practices. It is the statistical tool used for describing the relationships between multiple independent variables and a single binary outcome, such as the adoption of sustainable behavior. In regard to urban greening, logistic regression helps in identifying major predictors for successful community participation and eventual behavior change.

Literature concerned with urban sustainability and Social Impact Assessment underlines the importance of an integrated approach that brings together the arguments of ecology, society, and economy. In this sense, this study contributes to that stream of knowledge by making a Social Impact Assessment of the Micro Urban Food Forest Campaign, particularly with respect to a sustainability practices effectiveness evaluation and community engagement.

### III. RESULTS AND DISCUSSION

This study assessed the social impact and community involvement of Masagi Koffee's Micro-Urban Food Forest Campaign through a mixed-method approach. Drawn-out outcomes based on a mix of qualitative interview results and quantitative survey data informed views on what worked and what didn't in the campaign.

#### A) *Methodological Overview*

Data were sourced through key stakeholder, semi-structured interviews and structured questionnaires administered to campaign participants. Interviews provided deep qualitative insights, while survey data gave quantitative measures of community involvement, awareness, and perceived barriers on the same factors.

#### B) *Community Engagement*

While the quantitative data suggest the success of the campaign in terms of increasing the level of awareness on environmental issues among participants, the rate at which community involvement was achieved was not uniform. Positive stakeholders perceived the transformations set by the campaign to be inadequately reaching the larger population, hence the rate of participation was not uniform. ( McMillan & Chavis, 1986; Kim & Kaplan, 2004).

#### C) *Social Impact*

Socially, the campaign impact was very positive, especially concerning community cohesion and raising environmental awareness. The interviewees reported more community activities associated with the campaign that, according to Putnam's definition, created bonding social capital through stronger social connections (Putnam 1995, 2000). This is further supported by the fact that 75% of those who took part in the survey claimed that their social interactions had improved as a result of involvement with the campaign.

#### D) *Challenges and Barriers*

Despite these positive outcomes, a number of key barriers to broader community involvement were identified. The principal ones were the low level of communication between the organizers of the campaign and the community, along with related logistical challenges, including inconvenient times and locations for meetings. As detailed in Table 1, many participants felt these barriers were significant; the most critical being those identified by B3 and B6.

**Table 1: Perceived Barriers to Participation**

Variable	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Std. Error
Lack of Awareness (B1)	217	1	5	3.47	0.913	-0.274	0.165
Inconvenient Meeting Times (B2)	217	1	5	3.25	1.192	-0.353	0.165

Insufficient Resources (B3)	217	1	5	3.48	1.191	-0.548	0.165
Poor Communication (B4)	217	1	5	3.27	1.145	-0.325	0.165
Negative Community Perceptions (B5)	217	1	5	3.31	1.195	-0.255	0.165
Limited Accessibility (B6)	217	1	5	3.25	1.218	-0.565	0.165

Addressing these barriers is crucial for enhancing community engagement and ensuring the long-term success of the campaign.

**E) Sustainability Practices**

Another key feature focused on in this campaign was the sustainability practices. As depicted in Table 2, most of the participants appreciated these practices. Among all the practices, Behavioural Change scored the highest mean, though there is some level of variance in responses, suggesting more improvement could be achieved on the practices, as awareness is quite high regarding the practices' adoption vis-à-vis actual adoption (Steg & Vlek, 2009; Stern, 2000).

**Table 2: Adoption of Sustainability Practices**

Item	1 (Strongly Disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly Agree)	Total	Mean	Std. Deviation
Practice Adoption (S1)	9 (4.1%)	8 (3.7%)	71 (32.7%)	99 (45.6%)	30 (13.8%)	217	3.61	0.917
Current Practices (S2)	3 (1.4%)	13 (6.0%)	79 (36.4%)	81 (37.3%)	41 (18.9%)	217	3.66	0.899
Behavioral Change (S3)	5 (2.3%)	4 (1.8%)	68 (31.3%)	98 (45.2%)	42 (19.4%)	217	3.77	0.86
Significance of Change (S4)	7 (3.2%)	11 (5.1%)	67 (30.9%)	83 (38.2%)	49 (22.6%)	217	3.72	0.976
Local Solutions (S5)	9 (4.1%)	14 (6.5%)	59 (27.2%)	86 (39.6%)	49 (22.6%)	217	3.7	1.022
Solution Effectiveness (S6)	6 (2.8%)	14 (6.5%)	74 (34.1%)	82 (37.8%)	41 (18.9%)	217	3.64	0.953

These findings suggest that while the campaign was effective in raising awareness, additional efforts are needed to translate this awareness into consistent, sustainable behaviors within the community.

**F) Effectiveness of Sustainability Practices**

A logistic regression analysis was conducted to assess the effectiveness of these practices. The dependent variable was the effectiveness of sustainability practices (1 = effective, 0 = not effective). The independent variables (CI1, PI2, PI3, B3, KE1) represent different indicators related to the campaign's impact:

- **CI1:** Engagement – Measures the level of Community Engagement of participants in the campaign.
- **PI2:** Positive Impact on Social Change – Measures participants' perceptions of the campaign's influence on social change within the community.
- **PI3:** Awareness on Positive Activity – Captures participants' awareness of specific positive activities promoted by the campaign, focusing on their understanding and recognition of these activities.
- **B3:** Barriers to Resource Availability – Reflects the perceived barriers to participation and adoption of sustainable practices due to limitations in resource availability.
- **KE1:** Awareness of Environmental Issues – Assesses the extent to which the campaign enhanced participants' knowledge and awareness about environmental issues.

**Table 3: Logistic Regression Result**

Variable	B	S.E.	Wald	df	Sig. (p-value)	Exp(B) (Odds Ratio)	Interpretation
CI1	0.194	0.193	1.006	1	0.316	1.214	Not significant

PI2	0.346	0.186	3.444	1	0.063	1.413	Approaching significance, moderate predictor
PI3	0.038	0.189	0.041	1	0.839	1.039	Not significant
B3	0.146	0.159	0.836	1	0.361	1.157	Not significant
KE1	0.253	0.182	1.931	1	0.165	1.288	Not significant
<b>Constant</b>	-3.139	1.534	4.187	1	0.041	0.043	Significant intercept of the model

The logistic regression model was able to correctly classify 65.4% of the cases. The model accurately predicted 95.6% of participants who found the sustainability practices effective, but only 13.8% of those who did not find them effective. The analysis revealed that PI2 (Positive Impact on Social Change) was a key predictor, while other factors like community engagement (CI1) and Awareness of Environmental Issues (KE1) were not statistically significant.

**G) Thematic Overview**

The thematic matrix, as indicated in Table 4, shows the interrelation between such key themes as community involvement, positive impact, barriers, knowledge enhancement, sustainability practices, and the holistic impact of the environmental campaign. According to Clark and Nicholas, supported by Lovell et al., this matrix is one of the excellent depictions of how these elements are interrelated and influence the success of the campaign.

**Table 4: Thematic Matrix**

Theme	Community Involvement	Positive Impact	Barriers	Knowledge Enhancement	Sustainability Practices	Impact of Environmental Campaign
<b>Community Involvement</b>		Engagement leads to positive impact	Barriers to involvement	Involvement increases knowledge	Promotes sustainable practices	Engagement affects the overall impact
<b>Positive Impact</b>	Community involvement leads to positive impact		Barriers limit impact	Positive impact increases awareness	Positive impact includes sustainability	Positive impact is part of the overall impact
<b>Barriers</b>	Barriers to involvement	Barriers limit impact		Barriers to knowledge	Barriers to sustainability	Barriers affect the overall impact
<b>Knowledge Enhancement</b>	Involvement increases knowledge	Positive impact increases awareness	Barriers to knowledge		Knowledge promotes sustainability	Knowledge affects the overall impact
<b>Sustainability Practices</b>	Involvement promotes sustainability	Positive impact includes sustainability	Barriers to sustainability	Knowledge promotes sustainability		Sustainability practices affect the overall impact
<b>Impact of Environmental Campaign</b>	Engagement affects the overall impact	Positive impact is part of the overall impact	Barriers affect the overall impact	Knowledge affects the overall impact	Sustainability practices affect the overall impact	

This shows the essence and need to deal with community involvement factors and the barriers at play to maximize the campaign's positive impact and further the sustainability practices across the community.

**H) Discussions**

Probably, therefore, the Micro Urban Food Forest Campaign running at Masagi Koffe has gone a long way in terms of instilling environmental awareness and community togetherness, although with some loopholes in it. Appropriate communication strategies and the entire problem of logistical hindrances should be optimized within the campaign to induce greater community involvement. Further confidence should be targeted at wider community involvement for the adoption of practices in matters of sustainability. These results are in line with research based on fostering community engagement in urban sustainability initiatives.

These findings put a seal on the fact that community engagement and clear communication are of essence if such campaigns are to be a success. The findings agree with literature on urban greening initiatives, which emphasize that community engagement and clear communication are important in ensuring that such campaigns are successful. This research adds to the current understanding of how food forests in urban areas may impact urban communities by providing fundamental knowledge that can be transferred to other contexts from similar initiatives.

#### IV. CONCLUSION

The Micro Urban Food Forest Campaign at Masagi Koffee holds great potential in promoting environmental sustainability and building community in an urban setting. In this study, participating in the research, it has been realized that this campaign increased awareness of sustainability practices and promoted social cohesion for the participants. At the same time, it identified areas where critical improvements in the campaign's impact could be made—in this case, particularly concerning ways to increase community involvement and identify significant obstacles to participation.

The logistic regression analysis showed that only the variables of environmental awareness and perceived positive impacts emerged as predictors of the adoption of sustainable behavior, while community involvement and knowledge enhancement did not. This may mean that although the participants seemed generally to be aware and supportive regarding the goals of the campaign, more focused efforts are needed in order to translate this awareness into consistent sustainable actions.

It is in addressing these barriers—limited communication, transportation problems, and the inadequacy of resources—that community engagement will be increased and long-term campaign success ensured. Future campaigning would have an even greater level of social and environmental impact if it could combine better means of communications, access to resources, and community involvement.

The study contributes to the general understanding of urban environmental programs and practically informs the improvement of such initiatives elsewhere. Indeed, future studies must take into consideration these long-term effects of campaigns as well as investigate other confounding variables affecting the efficiency of sustainability practices.

#### V. REFERENCES

- [1] Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- [2] Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Planning Association*, 35(4), 216-224. <https://doi.org/10.1080/01944366908977225>
- [3] Barr, S., Gilg, A. W., & Ford, N. (2005). The household energy gap: Examining the divide between habitual- and purchase-related conservation behaviours. *Energy Policy*, 33(11), 1425-1444. <https://doi.org/10.1016/j.enpol.2003.12.016>
- [4] Brouwer, A. S., van den Broek, M., Seebregts, A., & Faaij, A. (2018). Social acceptance of renewable energy: An overview of conceptual approaches and analytical methods. *Energy Research & Social Science*, 36, 91-104. <https://doi.org/10.1016/j.erss.2017.10.018>
- [5] Chiesura, A. (2004). The role of urban parks for the sustainable city. *Landscape and Urban Planning*, 68(1), 129-138. <https://doi.org/10.1016/j.landurbplan.2003.08.003>
- [6] Clark, K. H., & Nicholas, K. A. (2013). Urban food forests: Multidimensional benefits and future research directions. *Urban Forestry & Urban Greening*, 12(3), 377-383. <https://doi.org/10.1016/j.ufug.2013.06.007>
- [7] Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Sage Publications
- [8] Esteves, A. M., Franks, D. M., & Vanclay, F. (2012). Social impact assessment: The state of the art. *Impact Assessment and Project Appraisal*, 30(1), 34-42. <https://doi.org/10.1080/14615517.2012.660356>
- [9] Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Sage Publications.
- [10] Haase, D., Larondelle, N., Kabisch, N., & Kroll, F. (2014). The role of urban green spaces in improving social inclusion and community health. *Urban Forestry & Urban Greening*, 13(3), 578-587. <https://doi.org/10.1016/j.ufug.2013.12.006>
- [11] Jacke, D., & Toensmeier, E. (2005). *Edible forest gardens, volume I: Ecological vision and theory for temperate climate permaculture*. Chelsea Green Publishing.
- [12] Kim, J., & Kaplan, R. (2004). Physical and psychological factors in sense of community: New urbanist Kentlands and nearby Orchard Village. *Environment and Behavior*, 36(3), 313-340. <https://doi.org/10.1177/0013916503260236>
- [13] Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally, and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239-260. <https://doi.org/10.1080/13504620220145401>
- [14] Lovell, R., Husk, K., & Cooper, C. (2015). Understanding how environmental enhancement and conservation activities may benefit health and wellbeing: A systematic review. *BMC Public Health*, 15, 864. <https://doi.org/10.1186/s12889-015-2214-3>
- [15] McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, 14(1), 6-23. [https://doi.org/10.1002/1520-6629\(198601\)14:1<6::AID-JCOP2290140103>3.0.CO;2-I](https://doi.org/10.1002/1520-6629(198601)14:1<6::AID-JCOP2290140103>3.0.CO;2-I)
- [16] Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, 6(1), 65-78. <https://doi.org/10.1353/jod.1995.0002>
- [17] Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon & Schuster.
- [18] Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, 29(3), 309-317. <https://doi.org/10.1016/j.jenvp.2008.10.004>
- [19] Stern, P. C. (2000). Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407-424. <https://doi.org/10.1111/0022-4537.00175>
- [20] Vanclay, F. (2003). International principles for social impact assessment. *Impact Assessment and Project Appraisal*, 21(1), 5-11. <https://doi.org/10.3152/147154603781766491>
- [21] Wilcox, D. (1994). *The guide to effective participation*. Partnerships Books.