Journal of Social Welfare and Community Development (SOWEL)
Vol. 1 No. 2, June 2024: 58-77
E-ISSN : 3089-5863
https://ejournal.bacadulu.net/index.php/sowel

Health to Live: Community Skills Development through Mask and Hand Sanitizer Production and Distribution during COVID-19 in Surabaya

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Article Info:

Keywords:
COVID-19;
Community Empowerment;
Economic Empowerment;
Masks;
Hand Sanitiser;

Article History:
Received : 16-03-2024
Revised : 27-05-2024
Accepted : 10-06-2024

Article DOI :
https://doi.org/10.70550/sowel.v1i2.306

Abstract

The COVID-19 pandemic created intertwined public health and socioeconomic challenges, prompting community-based interventions that combined health protection and practical skills training. This study examines the initial needs, implementation, documented outcomes, and limitations of the Health to Live program in Jambangan and Pagesangan, Surabaya. A descriptive qualitative evaluative approach was employed using needs-assessment findings, activity observations, program documentation, and participant responses. The initial assessment identified demand for masks, hand sanitiser, and handwashing facilities; however, individual socioeconomic profiles and baseline income data were not documented. The program integrated health education, practical exposure to mask and hand-sanitiser production, and product distribution. Activity records indicate positive participation and report gains in understanding and skills, although standardised competency testing and product-level quality-control records were unavailable in the manuscript. Consequently, the evidence supports initial productive-capacity development rather than verified increases in income, sales, business continuity, or economic self-reliance. Collaboration among university representatives, students, local government, and residents facilitated implementation, while the absence of follow-up monitoring limits sustainability assessments. Future initiatives should prioritise verified product safety, performance-based skills evaluation, basic business management, and longitudinal monitoring. The study distinguishes documented immediate outputs from prospective economic impacts.

How to cite : Fazlurrahman, H., Yasin, A., & Anwar, M. K. (2024). Health to Live: Economic Empowerment of Communities through the Production and Distribution of Face Masks and Hand Sanitiser Amid the COVID-19 Pandemic in the Jambangan and Pagesangan Neighbourhoods of Surabaya City. *Journal of Social Welfare and Community Development*, *1*(2), 58-77. https://doi.org/10.70550/sowel.v1i2.306

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e-ISSN: 3089-5863

INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) pandemic became a global public health crisis with multidimensional effects on society. COVID-19 was first reported as a cluster of pneumonia cases of unknown cause in Wuhan, Hubei Province, China, in late 2019. The disease subsequently spread rapidly across national borders, leading the World Health Organization (WHO) to declare it a pandemic on 11 March 2020. High levels of human mobility and the characteristics of disease transmission prompted governments worldwide to restrict social and economic activities to contain the spread of the virus (World Health Organization [WHO], 2020a, 2020b).

The consequences of the pandemic extended beyond public health. Mobility restrictions, the temporary suspension of business activities, changes in working arrangements, and declining economic activity caused some people to lose their sources of income or experience reduced earnings. Low-income households faced particularly complex circumstances, as they had to meet daily needs while also obtaining increasingly essential protective supplies, such as face masks and hand sanitiser. These conditions indicate that a response to the pandemic could not rely solely on healthcare services; it also required community empowerment strategies to strengthen the ability of individuals and groups to cope with socioeconomic change.

In Indonesia, rising COVID-19 cases led the government to declare a public health emergency under Presidential Decree No. 11 of 2020 and to designate the spread of COVID-19 as a national disaster under Presidential Decree No. 12 of 2020. The government also introduced Large-Scale Social Restrictions (Pembatasan Sosial Berskala Besar, PSBB) through Government Regulation No. 21 of 2020. Although these measures were necessary to reduce transmission, they also affected community economic activities, particularly households dependent on daily wages, informal work, and small-scale enterprises (Republik Indonesia, 2020a, 2020b, 2020c).

These developments further demonstrated the relationship between health and community economic resilience. As economic activities were restricted, income-generating opportunities declined, while the need for health-protection supplies increased. Wearing masks and practising hand hygiene became important components of community-based prevention. Chu et al. (2020) showed that mask use, together with other preventive measures, contributed to reducing the risk of respiratory infection transmission. Alcohol-based hand sanitiser, meanwhile, can provide an alternative for hand hygiene when soap and water are unavailable (Berardi et al., 2020; Singh et al., 2020).

These circumstances provide an opportunity to view the production of protective health supplies not only as a preventive measure but also as a form of community empowerment. Cloth-mask production can be learned using relatively simple skills and equipment. At a time of heightened demand for masks, the ability to produce them could offer two benefits: meeting the health-protection needs of families and local communities, and potentially developing into a productive activity. This approach is relevant to households affected by declining economic activity that need alternative skills applicable within their own homes or neighbourhoods.

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Similar circumstances were identified in Jambangan and Pagesangan urban villages, Surabaya. A preliminary survey conducted as part of the community service programme (Pengabdian kepada Masyarakat, PKM) at Universitas Negeri Surabaya identified community needs for masks, hand sanitiser, and handwashing facilities. This needs assessment informed the Health to Live programme, which integrated health awareness activities, training in mask and hand-sanitiser production, and product distribution. The programme involved Universitas Negeri Surabaya, the Student Executive Board of its Faculty of Economics (BEM FE UNESA), urban-village authorities, and local residents. Programme documents identified ten homemakers as the intended training participants, with the expectation that they would acquire practical knowledge and skills in producing masks and hand sanitiser.

The initial needs assessment for Health to Live must be interpreted in accordance with the information actually recorded. The survey and coordination with local authorities identified masks, hand sanitiser, and handwashing facilities as the principal needs. The programme subsequently targeted homemakers for training, with ten individuals specified as the planned participant group. This choice positioned households as an initial setting for skills development. However, the documents examined do not provide detailed profiles of prospective participants' ages, educational attainment, previous employment, business ownership, income levels, or individual economic burdens.

In this context, the socioeconomic pressure resulting from pandemic-related restrictions represents a broader situation supported by the literature rather than a measured individual-level survey finding concerning programme partners. The initial survey did not establish how many participants had lost their jobs, experienced declining income, encountered capital shortages, or faced limited market access. Accordingly, the need for protective health supplies may be reported as a documented field finding, whereas the need for economic strengthening is more appropriately presented as an intervention objective and a proposed need requiring a more detailed household assessment. This distinction allows the programme's relevance to be explained without exceeding the available empirical evidence.

The significance of Health to Live can be understood from two interrelated perspectives. The first concerns public health: access to masks and handwashing facilities, along with greater awareness of health protocols, was essential during the pandemic. The second concerns economic empowerment. Community programmes should ideally extend beyond charitable distribution to build people's capacity to produce useful goods independently. Production training can facilitate the transfer of skills that may subsequently be developed into income-generating household activities.

Previous research supports this approach. Roesminingsih et al. (2021) demonstrated that mask production can combine public health objectives with productive activities among sewing groups. Wahyuningsih et al. (2021) found that assistance with mask production can strengthen skills and create opportunities for product use and marketing. Probowati and Anindhita (2021) likewise showed that women's empowerment through mask production can complement efforts to promote compliance with health protocols. Rupita (2020), meanwhile, highlighted the importance of social capital and community-based productive activities in developing resilience during the pandemic.

 https://doi.org/10.70550/sowel.v1i2.306

e-ISSN: 3089-5863

Nevertheless, a gap exists between the economic empowerment objectives of Health to Live and the indicators available to evaluate the programme. The activity documents report improvements in community understanding and skills as achieved outcomes, but provide no recorded evidence of increased partner turnover or improvements in product quantity and quality. This discrepancy constitutes both a practical and a research gap. The programme appears to have supported initial capacity development, but it does not provide empirical evidence that these skills translated into higher income. Accordingly, this article does not claim that income increased; instead, it conceptualises economic empowerment as the development of productive capacity that may eventually support economic activity.

Against this background, the study addresses three questions: (1) how did community health and socioeconomic needs in Jambangan and Pagesangan during the COVID-19 pandemic inform the implementation of Health to Live? (2) How was community empowerment implemented through training in mask and hand-sanitiser production and distribution? (3) What outcomes were documented in terms of understanding, practical skills, health awareness, and the potential for economic empowerment? The study aims to analyse the needs underlying the programme, describe the empowerment process, and evaluate its outcomes using available indicators. Its contribution lies in integrating health education, production skills, the distribution of protective products, and the development of productive capacity within a single community empowerment framework during a period of crisis.

LITERATURE REVIEW

Empowerment Theory

This study adopts Empowerment Theory as its principal theoretical foundation. Empowerment views community members not merely as recipients of assistance but as individuals and groups capable of identifying problems, developing capacity, accessing resources, making decisions, and taking action to improve their circumstances. Perkins and Zimmerman (1995) describe empowerment as a process through which individuals and communities gain greater control over issues affecting their lives. Thus, empowerment extends beyond ultimate outcomes such as income and also encompasses improvements in capabilities, participation, self-confidence, knowledge, and the capacity to act.

Zimmerman (2000) explains that empowerment can be examined at individual, organisational, and community levels. At the individual level, it involves competence, decision-making ability, and confidence in one's capacity to influence living conditions. At the organisational level, empowerment concerns group participation, networks, and the shared use of resources. At the community level, it is reflected in people's ability to collaborate in identifying and resolving problems. This framework is relevant to Health to Live because community members received not only protective supplies but also knowledge and practical production skills.

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Community Economic Empowerment

Community economic empowerment refers to the process of strengthening the capabilities of individuals or groups to undertake productive activities, manage resources, capitalise on economic opportunities, and gradually become more self-reliant. In this study, economic empowerment is not equated directly with increased turnover because the programme records do not demonstrate changes in income. Rather, it is understood initially as the development of productive capacity: the ability to understand production processes, create products with practical value, and recognise opportunities to turn those products into economic activities.

During the pandemic, home-based productive activities became particularly relevant because they could be undertaken on a small scale and adapted to mobility restrictions. Cloth-mask production is an example of an activity that can be learned relatively easily and for which there was demonstrable demand during the crisis. Roesminingsih et al. (2021) and Wahyuningsih et al. (2021) showed that mask-making training can strengthen skills and open up entrepreneurial opportunities. Nevertheless, economic success still depends on sustained production, product quality, marketing, and ongoing support.

Health Education and Capacity Development

Empowerment during the pandemic cannot be separated from health literacy. Community members need to understand why masks are worn, why hand hygiene matters, and how other preventive behaviours work, so that the use of protective products is informed rather than merely habitual. Chu et al. (2020) emphasised the importance of masks and physical distancing in reducing transmission risks, while Berardi et al. (2020) and Singh et al. (2020) discussed alcohol-based hand sanitiser as an alternative for maintaining hand hygiene in particular circumstances.

Within Health to Live, health education was delivered before and alongside production training. This approach combines knowledge with practical skills: knowledge explains why an action is necessary, while skills enable participants to translate that understanding into practice.

Training as an Instrument of Empowerment

Training is an important instrument of empowerment because it facilitates the direct transfer of knowledge and skills. Effective training should not only convey information but also allow participants to observe demonstrations, practise independently, discuss procedures, and assess results. In Health to Live, the training process involved coordination, needs identification, presentation of learning materials, demonstrations, product-making practice, questions and answers, and evaluation. Together, these activities constitute a capacity-building process that can provide a foundation for empowerment.

 https://doi.org/10.70550/sowel.v1i2.306

e-ISSN: 3089-5863

Community-Based Skills Training, Productive Capacity, and Microenterprise Sustainability

Community-based skills training seeks to expand residents' ability to turn knowledge into productive action by using local resources and social support. From the perspective of Empowerment Theory, community participation in needs identification, practical activities, and evaluation contributes to the development of competence and decision-making capacity (Perkins & Zimmerman, 1995; Zimmerman, 2000). However, learning outcomes must be distinguished from economic outcomes. The ability to follow a demonstration or complete a single practical session does not, in itself, demonstrate consistent production, adequate product quality, business continuity, or additional income.

McKenzie and Woodruff (2014) showed that evaluations of entrepreneurship training programmes often face measurement problems, short observation periods, and difficulties identifying changes in profits or sales. Experimental findings by de Mel et al. (2014) among women in Sri Lanka also indicated that training can improve business practices without increasing profits or sales across all target groups. Changes in skills and business behaviour should therefore be treated as intermediate outcomes rather than substitutes for economic performance data.

These limitations do not imply that training lacks value. The evidence reassessed by McKenzie (2021) suggests that small-business training can, on average, be associated with improvements in sales and profits, although effects tend to be modest and vary across programme designs. Valdivia (2015) highlighted the importance of training content and medium-term observation for women-owned microenterprises, while Campos et al. (2017) found that personal initiative training can generate business outcomes that differ from those of conventional training. Collectively, this literature suggests that programme design, training intensity, participant characteristics, and sustained evaluation influence the prospects for economic change.

For Health to Live, sustainability cannot be ensured by the ability to make masks and hand sanitiser during a single training session. Continued activity requires access to raw materials, compliance with health and safety requirements, quality control, cost calculation, awareness of actual market demand, distribution networks, and follow-up assistance. Furthermore, because demand for protective supplies was closely linked to the pandemic, business feasibility after the crisis must be reassessed rather than assumed to remain unchanged. This study therefore treats productive capacity as a gradual and conditional foundation for economic empowerment.

Previous Studies and the Position of the Present Study

Previous studies indicate that producing protective health supplies can generate both social and economic benefits. Roesminingsih et al. (2021) focused on empowering mask makers, Wahyuningsih et al. (2021) highlighted improvements in skills and entrepreneurial potential, and Probowati and Anindhita (2021) demonstrated that women's empowerment can complement greater awareness of health protocols. Unlike these studies, Health to Live integrated health education, training in two types of protective products, and product distribution into a single programme. Given the limited economic data, the present study interprets community capacity development as a basis for future productive activities rather than evidence of already realised income growth.

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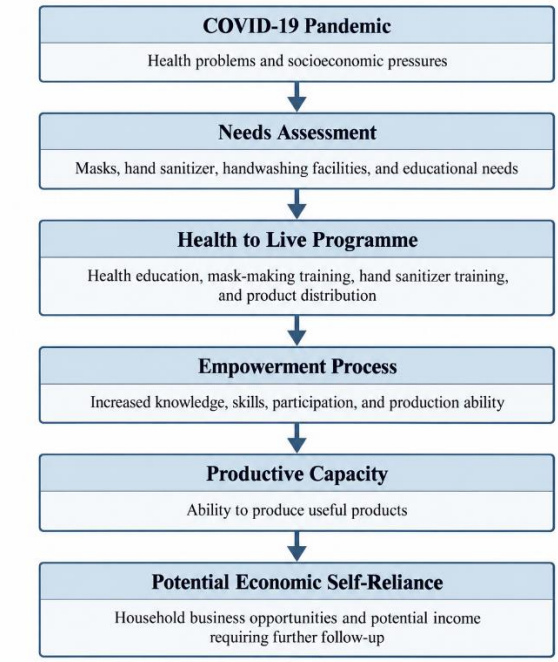
Conceptual Framework

The study's conceptual framework draws on Zimmerman's (2000) Empowerment Theory. The COVID-19 pandemic is understood as a condition that created both health-protection needs and socioeconomic pressures. These two challenges informed the needs assessment, programme design, empowerment activities, and evaluation of community productive capacity. The conceptual sequence is presented in Figure 1.

Figure 1. Conceptual Framework of the Health to Live Programme



Source: Developed from Zimmerman (2000) and the Health to Live programme documentation.

The framework treats higher income as a potential long-term effect rather than an automatic consequence of training. The link that can be examined using the programme records extends from education and training to knowledge, skills, participation, and initial productive capacity. Progress towards business activity and income generation requires further assistance and follow-up measurement.

METHODS

This study employed a descriptive qualitative evaluative approach integrated with a community service programme (Pengabdian kepada Masyarakat, PKM) delivered through an integrated training model. This approach was selected because the programme was not designed as an experiment testing statistical cause-and-effect relationships. Instead, it sought to identify community needs, describe the empowerment process, and evaluate descriptively the changes observed following education and practical training.

 https://doi.org/10.70550/sowel.v1i2.306

e-ISSN: 3089-5863

Health to Live integrated health education, information on health protocols, mask-making training, hand-sanitiser production training, and product distribution. Programme outcomes were assessed in terms of relevance to identified needs, participant involvement, understanding of the material, ability to follow production procedures, and the emergence of productive capacity. Economic empowerment was treated as a capacity-development process because post-training turnover and income data were unavailable.

The programme was implemented among residents of Jambangan and Pagesangan urban villages, Surabaya, East Java, Indonesia. The locations were selected on the basis of preliminary findings identifying a need for protective health supplies, particularly masks, hand sanitiser, and handwashing facilities during the COVID-19 pandemic. The target group comprised local residents, especially homemakers, whose involvement was coordinated through the respective urban-village authorities.

The initial programme documents stated that ten homemakers were expected to participate in the training. Participants were selected purposively within the context of a community-based programme rather than through probability sampling. The local authorities helped invite participants, arrange the venue, and support operational requirements.

The programme targeted residents of the two urban villages involved in community health activities, particularly the homemakers identified as prospective trainees. The figure of ten refers to the planned number of participants and should not automatically be interpreted as the number who attended or completed every practical session. To avoid inaccuracies, this analysis uses only the characteristics recorded in programme documents. Individual-level information on age distribution, educational attainment, occupation, business status, household income, and number of dependants could not be reported because it was not available in the records reviewed.

The needs assessment was analysed in two categories: (1) explicitly documented health needs, namely masks, hand sanitiser, and handwashing facilities; and (2) economic needs or barriers that had not been specifically measured. Information on income losses, unemployment, capital constraints, and entrepreneurial skills was not classified as a survey finding unless supported by an original instrument, summary record, or interview notes. This procedure distinguished field observations from the wider pandemic context described in the literature and from the researchers' own interpretations.

The programme was implemented in five stages. The first involved identifying community problems and needs through coordination between the PKM team and the Faculty of Economics Community Service (Fakultas Ekonomi Mengabdi, FEM) committee, followed by surveys in Jambangan and Pagesangan. The surveys identified a need for masks, hand sanitiser, and handwashing facilities. The second stage involved communication and consultation with local stakeholders to determine participants, venue arrangements, and technical requirements.

The third stage comprised the preparation of training materials and facilities. The team reviewed the literature and prepared handouts, modules, health education materials, guidance on health protocols, and product-making instructions. The fourth stage involved education and training: participants received explanations about health protection and took part in mask- and hand-sanitiser-making practice. The fifth stage consisted of evaluation and reflection through documentation, questions and answers, interviews or participant testimonials, and a descriptive assessment of programme implementation.

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The study used primary and secondary data. Primary data were derived from the community needs survey, observations of programme implementation, interactive discussions and questions, participant interviews or testimonials, and activity documentation. Secondary data were drawn from programme records, training materials, modules, handouts, regulations, and scientific literature on health and empowerment. Because the study did not include individual-level data on income before and after the programme, sales volume, profit, or turnover, these indicators were not used as evidence of direct programme success.

Data were collected through observation, interviews or testimonials, activity documentation, and documentary and literature reviews. Observations during the needs survey and programme activities captured community needs and participant involvement. Interviews or testimonials were used to obtain feedback on the perceived benefits and experience of training. Documentary records covered coordination, the presentation of materials, practical sessions, and programme outcomes. Because the original manuscript did not provide structured interview instruments or pre-test and post-test results, improvements in knowledge were not expressed as scores or percentages.

Outcome indicators were developed to align with the research questions and Empowerment Theory. Table 1 presents the indicators, data sources, and boundaries for interpreting the findings.

Table 1. Programme Analysis and Outcome Indicators

Dimension	Indicator	Data Source	Interpretation
Needs assessment	Need for masks, hand sanitiser, and handwashing facilities	Survey and coordination	Basis for programme relevance
Health knowledge	Understanding of health and COVID-19 protocols	Observation, Q&A, and testimonials	Indication of improved knowledge
Practical skills	Ability to follow mask-making and hand-sanitiser production stages	Observation and documentation	Indication of skill development
Participation	Enthusiasm, interaction, practical activities, and discussion	Observation and documentation	Empowerment process
Productive capacity	Ability to understand and undertake production procedures	Practical activities	Prerequisite for economic empowerment
Economic impact	Turnover, income, sales volume, and business continuity	Not available	Cannot yet be concluded

Source: Developed from the Health to Live programme documentation and Empowerment Theory.

 https://doi.org/10.70550/sowel.v1i2.306

e-ISSN: 3089-5863

Documentary evidence was evaluated by distinguishing attendance records, evidence of practical activities, product evidence, and evidence of competence. Photographs of coordination meetings and community gatherings demonstrate institutional activities or participation but cannot substitute for records of participants' practical performance. Photographs of training show involvement in visible activities but do not demonstrate mastery of all procedures, consistent quality, or product safety. A stronger skills evaluation would require checklists of steps completed by participants, products made by each individual or group, observation rubrics, and instructors' corrective feedback. Since these records were not presented, conclusions concerning skills are limited to indications of initial capacity drawn from implementation reports.

The quality and safety assessment of hand sanitiser requires a separate evidentiary basis. The existence of mixing activities, ingredients, or finished products does not automatically establish compliance with formulation standards or safety for use. Indicators such as records of alcohol type and concentration, reference formulations, raw-material traceability, final alcohol-content verification, labelling, and occupational safety controls should be reported as procedures actually performed only when verifiable implementation records exist. Otherwise, these matters must be explicitly documented as limitations and recommendations for future programme improvement.

Table 2. Relationship between Documentary Evidence and Programme Evaluation Indicators

Dimension	Evidence in the Manuscript	Limitations of Interpretation	Further Documentation Required
Coordination	Figure 2: coordination meeting/materials	Evidence of planning, not competency	Minutes, dates, decisions, and list of persons responsible
Participation	Figure 3: community gathering	Shows a collective activity, not verified individual attendance	Final attendance records and participant profiles
Practical training	Figure 4: practice and equipment	Indicates demonstration or practical activities	Step-by-step observation sheets and instructor notes
Products	Records mention masks and hand sanitiser	Quantities, quality, and suitability testing not documented	Product photographs, unit counts, sizes/batches, and specifications
Hand-sanitiser safety	No testing procedures reported in the manuscript	Compliance with standards cannot be established	Formulation, material certificates, alcohol QC, labels, and batch records
Economic benefits	No sales, turnover, or profit data	Cannot establish economic impact	Production and sales logs, prices, costs, cash records, and follow-up

Source: Analysis based on Health to Live programme documentation.

Data were processed by collecting and organising all available information, classifying it according to the study objectives, reducing substantively repetitive information, and identifying key themes. The thematic categories covered community needs, programme implementation, knowledge improvement, practical skills, participation, productive capacity, and the potential for economic empowerment.

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A descriptive qualitative and thematic analysis was performed. The first research question was addressed using survey findings and coordination records; the second was examined through documented stages, observations, and training activities; and the third was analysed through participants' responses, engagement in practical activities, understanding of the material, and programme output indicators. The findings were then interpreted using Zimmerman's (2000) Empowerment Theory to distinguish developments at individual, organisational, and community levels.

The study has methodological limitations. It lacked pre-test and post-test data, standardised evaluation instruments, turnover or income data, production and sales volumes, and post-training follow-up on business sustainability. The number of participants was also limited within the community programme setting. Consequently, the findings are not intended to be generalised to the population of Surabaya. The term economic empowerment is used to describe the development of capacity for potential economic activity, not to claim that incomes had already risen.

RESULT AND DISCUSSION

Results

The implementation of Health to Live demonstrates that community empowerment activities in Jambangan and Pagesangan emerged from needs identified during the COVID-19 pandemic. The initial assessment established a need for masks, hand sanitiser, and handwashing facilities. These needs were addressed through coordination among the PKM team, the FEM committee, BEM FE UNESA, local authorities, and community members.

Rather than focusing solely on distributing health supplies, the programme incorporated education and practical training to strengthen community capabilities. Topics included the importance of health protection, COVID-19 health protocols, mask-making practice, and hand-sanitiser production. Programme documents describe active participant engagement and interactive training sessions. Evaluation, questions and answers, documentation, and the collection of participant testimonials were conducted at the end of the activities.

Table 3. Summary of Health to Live Programme Outcomes

Outcome Dimension	Documented Finding	Interpretation
Needs assessment	Need for masks, hand sanitiser, and handwashing facilities	Programme aligned with identified needs
Health education	Health and COVID-19 prevention materials were delivered	Foundation for health knowledge
Production skills	Participants engaged in mask-making and hand-sanitiser practice	Initial productive capacity was developed
Participation	Participants were active, enthusiastic, and engaged in questions and answers	Indicates engagement in empowerment activities
Understanding and skills	Reported as achieved in the programme output indicators	Principal outcome supported by the records
Increased turnover	Not available	Cannot be claimed as a programme impact

 https://doi.org/10.70550/sowel.v1i2.306

e-ISSN: 3089-5863

Outcome Dimension	Documented Finding	Interpretation
Product quantity and quality	Not available	Cannot be evaluated
Economic potential	Suggested by the ability to produce useful goods	Prospective benefit, not a demonstrated financial outcome

Source: Compiled from the Health to Live programme records.

Initial Assessment Findings and Verification Status of Outcomes

A review of the programme documents indicates that the clearest baseline information concerned the need for health protection. Residents of Jambangan and Pagesangan were identified as requiring masks, hand sanitiser, and handwashing facilities. Homemakers were selected as the target group for training, with ten prospective participants specified in the programme plan. However, the documents reviewed do not include a verified count of actual participants, household economic characteristics, pre-training income, employment circumstances, business experience, or capital requirements. These documentary gaps limit the study's ability to describe in detail the programme partners' economic vulnerability before the intervention.

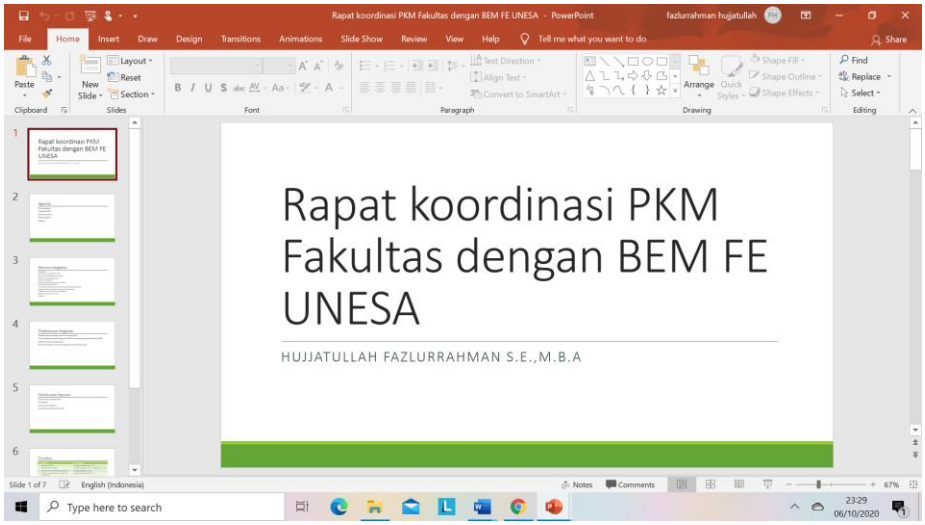
Photographic documentation provides different forms of support for different indicators. Figure 2 documents the coordination process, Figure 3 shows the community gathering, and Figure 4 depicts practical training and the equipment used. Although relevant to programme implementation, these images do not, by themselves, constitute individual competency assessments or evidence of product safety testing. The reported improvements in understanding and skills derive from the programme's descriptive evaluation rather than from measured changes based on pre-tests and post-tests, practical performance rubrics, or standardised product-quality assessments.

Given these limitations, the documented outcomes include the delivery of education, community involvement in training, and indications of initial productive-capacity development. There is insufficient empirical evidence to establish how many masks or units of hand sanitiser participants independently produced after the programme, how many products were sold, or whether participant incomes increased. A tiered interpretation of outcomes is therefore necessary to avoid treating the successful delivery of educational activities as evidence of economic success.

The programme's strongest documented achievements concern knowledge, practical skills, and participation. The original records identify improvements in understanding and skills as achieved output indicators, but provide no data on increased turnover or improvements in product quantity or quality. Economic empowerment is therefore discussed as a process of developing productive capabilities rather than as demonstrated short-term income growth.

e-ISSN: 3089-5863

Figure 2. Documentation of Initial Coordination between the PKM Team and BEM FE UNESA



Source: Activity documentation included in the original manuscript.

Discussion

Health and Socioeconomic Needs as the Basis of the Programme

The first research question concerns how community health and socioeconomic needs informed programme implementation. The findings indicate that the programme began with problem identification rather than a unilateral decision to distribute assistance. The PKM team and the FEM committee coordinated online and subsequently conducted surveys in Jambangan and Pagesangan. These surveys identified needs for masks, hand sanitiser, and handwashing facilities, which formed the basis for designing the intervention.

This situation highlights two interrelated issues. The first was a public health challenge, reflected in heightened demand for personal protection and hygiene practices during the pandemic. The second was socioeconomic: restrictions on activities could reduce household income while the need for protective supplies remained. Health assistance alone might therefore be insufficient if community members remained only recipients of products without developing the capacity to meet some of these needs independently.

This perspective is consistent with Empowerment Theory. Perkins and Zimmerman (1995) explain that empowerment links individual competence, support systems, and proactive action. In Health to Live, the need for masks and hand sanitiser provided a concrete problem, while education and training served as tools for improving residents' ability to respond. The needs survey also reflected a context-sensitive approach because programme activities were determined after local needs had been identified.

These findings are consistent with Roesminingsih et al. (2021), who showed that mask production during the pandemic could combine health protection with productive activity. Wahyuningsih et al. (2021) likewise showed that mask-making training can build skills and open up possibilities for household economic activities. Health to Live differs by integrating training in two types of protective products, education, and distribution within one programme, linking health needs and productive capacity within a common empowerment process.

 https://doi.org/10.70550/sowel.v1i2.306

e-ISSN: 3089-5863

Figure 3. Community Programme Activities



Source: Activity documentation included in the original manuscript.

The Empowerment Process through Training and Product Distribution

The second research question addresses the community empowerment process. The findings show that empowerment was pursued through a sequence of needs identification, institutional coordination, preparation, education, practical skills development, product distribution, and evaluation. Once community needs had been identified, the PKM team and the FEM/BEM FE UNESA committee consulted officials in Jambangan and Pagesangan. Local authorities assisted with participant recruitment, venue preparation, and technical arrangements, enabling the programme to proceed through collaboration among stakeholders.

The preparation stage included a literature review and the development of handouts and training modules. Participants then received information on health and health protocols before engaging in production activities. Delivering education before practice helped explain the purpose of the products. Masks and hand sanitiser were presented not merely as items to be manufactured, but primarily as tools for protecting health.

During the practical sessions, participants were introduced to the equipment, materials, and stages of product preparation. Programme documentation indicates that participants responded enthusiastically and that the training was interactive. From the perspective of Zimmerman (2000), these activities can be interpreted as contributing to individual empowerment through competency development, organisational empowerment through collaboration among university staff, students, urban-village authorities, and community groups, and community empowerment through links between local needs and the university's knowledge resources.

Training offers a different form of value from the distribution of assistance. Product distribution addresses immediate needs, whereas training can provide reusable knowledge and skills. Nevertheless, such activities do not yet constitute comprehensive economic empowerment. Transforming production capabilities into viable business activities requires further steps, including quality standardisation, cost calculation, pricing, packaging, marketing, financial recordkeeping, market access, and post-programme mentoring.

e-ISSN: 3089-5863

Figure 4. Practical Training and Examples of Equipment Used



Source: Activity documentation included in the original manuscript.

Improvements in Understanding, Skills, Health Awareness, and Economic Potential

The third research question focuses on programme outcomes. According to the activity documents, the clearest reported outcomes concerned participants' understanding and practical skills. The output indicators recorded improvements in community understanding and skills, whereas evidence of increased turnover or improvements in product quantity and quality was unavailable. This distinction is important because it separates immediate outcomes from subsequent economic impacts.

The immediate results are reflected in participants' understanding of health protection, involvement in awareness-raising activities, ability to follow product-making procedures, and positive responses to the training. Evaluation involved interaction, interviews or testimonials, and questions and answers. However, because no pre-tests or post-tests were conducted, the magnitude of knowledge improvement cannot be expressed as a numerical score or percentage. Claims regarding improved understanding therefore remain descriptive and are based on programme reports and evaluations.

From the perspective of Zimmerman (2000), the programme represents an initial stage of individual empowerment through the development of competence and the capacity to act. The relationship between skills and economic empowerment can be represented as a progression from knowledge to skills, production capacity, opportunities for productive activity, and potential income. The available programme data support only the stages up to initial production capability. Any progression to income generation requires additional evidence on sustained production, marketing, sales volume, turnover, and profit.

The observed form of economic empowerment is therefore more accurately described as empowerment through the development of productive capacity. Participants acquired skills that could potentially support economic activity, but the study cannot determine whether these capabilities later led to regular production, product marketing, or increased household income. This interpretation strengthens the study's validity by aligning its conclusions with the level of evidence available.

 https://doi.org/10.70550/sowel.v1i2.306

e-ISSN: 3089-5863

The findings suggest three levels of empowerment. The first is health empowerment, reflected in an enhanced capacity to understand protective health measures. The second is skills empowerment, referring to the development of practical production skills. The third is the potential for economic empowerment, or the possibility of turning acquired skills into productive activities. This third level remains prospective and requires further mentoring and measurement.

Enabling Factors, Implementation Constraints, and Prospects for Sustainability

Enabling factors evident in the documentation include the alignment of programme materials with identified health needs, collaboration among university personnel, students, local authorities, and residents, and the use of direct learning through instruction and practice. Support from urban-village officials in arranging participants and facilities formed part of a local coordination mechanism connecting educational resources with community needs. Within Zimmerman's (2000) framework, this collaboration can be interpreted as a component of organisational and community empowerment, although the quality and intensity of each stakeholder's contribution were not measured separately.

The constraints that can be confirmed from the available documents relate primarily to programme evaluation. The records do not provide baseline data on participants' economic circumstances, before-and-after skills assessments, product quantities per participant, documented quality tests, or post-training business monitoring. Limited capital, equipment, time, raw materials, and market access are relevant risks to microenterprise sustainability, but should not be presented as barriers actually experienced by Health to Live participants without supporting interview or survey evidence.

Programme sustainability should be assessed by participants' ability to repeat production processes at consistent quality, obtain inputs, manage costs, set prices, and adapt products to real demand. Research indicates that training may change business practices without necessarily increasing profits or sales (de Mel et al., 2014), while medium-term effectiveness depends on intervention characteristics and subsequent evaluation (McKenzie & Woodruff, 2014; McKenzie, 2021; Valdivia, 2015). A single training programme should therefore be regarded as an introductory skills-development phase connected to further mentoring, not as a guarantee that a sustainable business will emerge.

A future programme could adopt three successive stages. First, production skills and product safety should be assessed using simple performance-based instruments. Second, business feasibility should be strengthened through cost recording, production-cost calculation, customer mapping, and appropriate distribution channels. Third, periodic monitoring should record production frequency, the number of units meeting quality requirements, sales revenue, costs, profit, and continuity of business activity. For products whose demand is strongly linked to the pandemic, contemporary market demand and options for diversification should also be considered when evaluating business feasibility.

e-ISSN: 3089-5863

Product Safety Evaluation and Hand-Sanitiser Standardisation

Product safety is a particular concern in hand-sanitiser training because the product is applied directly to the skin and may contain flammable substances. The World Health Organization (2010) published guidance on the local production of alcohol-based handrub formulations, including reference formulations, alcohol-concentration testing, process control, and labelling and safety requirements. This guidance can provide a normative reference for designing training procedures; however, citing WHO standards does not establish that Health to Live products were prepared or tested in accordance with those standards.

The programme manuscript does not specify the formulation actually used, raw-material quality, procedures for verifying final alcohol concentrations, batch records, storage protocols, or product test results. Consequently, this study does not claim that the hand sanitiser produced during the activities passed quality control, met WHO standards, or was proven safe for distribution through testing. Future programmes should involve technically qualified supervisors, documented production and quality-control procedures, appropriate testing, correct labelling, and compliance with applicable requirements before products are used or distributed. If the original implementation records contain such information, it should be reported in detail after verification.

Theoretical and Practical Implications

Theoretically, the study supports the relevance of Zimmerman's (2000) Empowerment Theory for interpreting community-based service programmes. Empowerment can be assessed not only through financial success but also through processes in which community members acquire knowledge, competence, opportunities to participate, and the capacity to act. In Health to Live, the most visible individual-level developments concerned understanding and practical skills, while organisational and community dimensions were reflected in collaboration among stakeholders.

In practical terms, follow-up programmes should not end with technical training. Participants would benefit from further support in product standardisation and safety, packaging, production-cost calculation, pricing, simple financial recordkeeping, digital marketing, and the development of business groups. Future evaluations should also include pre-tests and post-tests as well as post-training monitoring of production volumes, sales, turnover, costs, profits, and continuing activities, allowing the relationship between training, skills, production, marketing, and income to be assessed more rigorously.

CONCLUSION

Health to Live in Jambangan and Pagesangan, Surabaya, was a community-based intervention that linked health-protection needs during the COVID-19 pandemic with education and practical training. The initial assessment explicitly identified needs for masks, hand sanitiser, and handwashing facilities. Homemakers were selected as the target group, with ten individuals recorded as the intended number of participants. However, individual socioeconomic characteristics, baseline income, business experience, and the specific economic pressures faced by programme partners were not documented adequately and therefore cannot be presented as measured survey findings.

 https://doi.org/10.70550/sowel.v1i2.306

The activities involved institutional coordination, community participation, practical product-making sessions, and descriptive reports of improved understanding and skills. These outcomes support the interpretation that the programme created opportunities for initial productive-capacity development. However, the absence of pre-tests and post-tests, individual performance assessments, product output and quality records, and hand-sanitiser safety testing limits certainty regarding the extent of skills development and product suitability. Moreover, no data were available on repeated production, sales volumes, turnover, profits, changes in income, or post-programme business continuity. Increased economic well-being and household financial self-reliance therefore cannot be established as demonstrated programme impacts.

The principal enabling factors were the programme's relevance to identified health needs and collaboration among local stakeholders. The main verified limitations concerned incomplete evaluation documentation and the absence of follow-up monitoring. Sustainable empowerment requires performance-based skills assessments, product quality and safety controls, business management training, market-demand analysis, ongoing mentoring, and longitudinal evaluation. Future research should document participants' economic circumstances before intervention, production capabilities after training, product quality, and business indicators at several follow-up points, so that the relationship between skills development and economic impact can be assessed more convincingly.

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