DIGITALIZATION OF SHORT FOOD CHAINS: CREATING WEBSITES FOR LOCAL FARMERS IN THE BRASOV METROPOLITAN AREA WITHIN THE EUROPEAN FOODCLIC PROJECT

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Abstract. *This paper analyses an innovative digitalization action for short food chains, carried out within the European FoodCLIC project (Horizon Europe, 2022–2027), in the Brasov metropolitan area – one of the eight European pilot regions involved. In the first implementation phase, 30 standardized websites were created free of charge for local farmers active at municipal agri-food markets. Each web page, structured in six thematic sections and optimized for mobile devices, is associated with a unique QR code displayed at the farmer's stall, enabling consumers to instantly access information about the farm, its products and production methods. The action responds to the problem of informational asymmetry between producers and consumers, identified as one of the main barriers to local food purchasing. The participatory co-design methodology, simplified training and iterative monitoring eliminated financial and technical barriers for small producers. Initial field observations confirm positive adoption by farmers and an increase in spontaneous conversations at market stalls triggered by the QR codes, contributing to the restoration of the farmer–consumer connection and to the development of a local digital agri-food ecosystem in the Brasov area.*

Keywords: *short food chains, agri-food digitalization, FoodCLIC, QR code, Brasov.*

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1. Introduction

Contemporary food systems face complex structural challenges: increasing dependence on imports, excessive elongation of supply chains, declining agricultural incomes, loss of the connection between consumers and food sources, and erosion of trust in product quality and authenticity. At the European Union

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level, the Farm to Fork Strategy (2020) identifies the shortening of food chains as a strategic priority for building more resilient, sustainable and inclusive food systems.

In Romania, these challenges take on additional dimensions. The country is one of the few EU member states with high agricultural potential – consistently ranking among the top producers of wheat, sunflower and maize in Europe – yet paradoxically imports a significant proportion of the food consumed by its urban population. Between 2010 and 2022, the value of Romania's agri-food imports increased by 185%, surpassing 8 billion EUR annually, even though the utilized agricultural area exceeds 13 million hectares [15]. This paradox reflects, in part, the inability of small local producers to efficiently access urban distribution and marketing channels.

European urban areas are at the centre of these transformations. They concentrate both the demand for healthy and sustainable food, and the risks associated with unequal access to food for vulnerable groups. Municipalities are increasingly acting as food policy actors, but their interventions often remain fragmented and disconnected from the broader context of regional and national policies [21].

The European FoodCLIC project (Horizon Europe, 2022–2027) proposes an integrated approach to transforming urban food environments in eight European pilot regions, including the Brasov metropolitan area. The project's conceptual framework – the CLIC acronym – organises actions around four pillars: Co-benefits (economic, social and environmental sustainability), Linkages (rural–urban connections), Inclusion (access for vulnerable groups) and Connectivity (integration of food concerns into other public policy domains) [6].

One of the concrete actions of the Brasov Living Lab within FoodCLIC targets the digitalization of short food chains through the free creation of websites for local farmers active at the city's agri-food markets. The action aims to reduce informational asymmetry between producers and consumers and to rebuild the direct farmer–consumer connection, digitally mediated through QR codes displayed at market stalls.

This paper describes the context, theoretical foundation, methodology and preliminary results of this action, contributing to the literature on the application of digital tools in shortening food chains in metropolitan regions of Central and Eastern Europe.

Foodclic Project Context and the Brasov Metropolitan Area

The FoodCLIC Project

FoodCLIC (integrated urban FOOD policies – developing sustainability Co-benefits, spatial Linkages, social Inclusion and sectoral Connections) is a project funded under the Horizon Europe framework programme, running from September 2022 to February 2027. The project brings together 26 partners from 10 European countries and operates in eight urban regions: Brasov (Romania), Barcelona (Spain), Budapest (Hungary), Berlin (Germany), Lucca (Italy), Amsterdam (Netherlands), Aarhus (Denmark) and Lisbon (Portugal) [6].

The central objective of FoodCLIC is to connect people, policies and places for an integrated approach to transforming urban food environments, ensuring access to healthy, safe and sustainably produced food for all residents, especially vulnerable groups [3]. In each participating region, FoodCLIC supports the establishment or consolidation of Food Policy Networks, bringing together representatives from public administration, academia, the private sector and civil society, with the aim of designing, testing and scaling interventions in local food systems.

The CLIC theoretical framework structures interventions along four interdependent dimensions. Co-benefits entail generating simultaneous economic, social and environmental benefits from each intervention. Linkages aim to strengthen connections between producing rural areas and consuming urban environments. Inclusion seeks to ensure access to healthy food for resource-limited groups. Connectivity implies integrating food concerns into urban planning and other public policy domains [6]. In the case of the intervention analysed, all four pillars are addressed: zero cost ensures inclusion, websites strengthen rural–urban linkages, economic effects on farmers generate co-benefits, and digitalization integrates the food dimension into the local information economy.

The FoodCLIC implementation mechanism is based on the concept of the Living Lab – a real-life experimentation space in which interventions are designed, tested and evaluated under real conditions, not in a laboratory. The Brasov Living Lab is coordinated by Transilvania University and works closely with Brasov City Hall, local farmers and consumer groups. The iterative approach of the Living Lab allows rapid adjustment of interventions based on field feedback, ensuring that the solutions developed are relevant and effectively adopted by beneficiaries [6].

The Brasov Metropolitan Area and the Local Agri-food System

The municipality of Brasov, located in the heart of the Carpathian Mountains at an altitude of 967 m, forms part of a metropolitan area comprising 17 administrative-territorial units, with a total population of approximately 380,000 inhabitants. The

Brasov Metropolitan Area (BMA) is one of Romania's most dynamic economic regions, combining cultural and mountain tourism with a diversified industry and a traditional agri-food sector [7].

The region is known for its remarkable agricultural diversity: vegetables (Stupini, Bartolomeu), mountain fruits (Zărnesti, Râsnov), dairy products (Vale, Holbav), honey and aromatic plants from the sub-Carpathian zone [7]. Mountain agriculture supplies high-quality products with local tradition, providing a competitive advantage over imported goods. This diversity positions the BMA as a potential supplier of healthy, authentic food for the urban population, if marketing barriers were eliminated.

Nevertheless, the Brasov agri-food system faces major structural challenges: Romania relies heavily on food imports; obesity rates are high; and small local sustainable producers encounter significant difficulties in accessing urban markets. According to the Brasov Intervention Status Report within FoodCLIC (D3.2, 2024), a gap of 35–40% is estimated between locally available production and actual local product purchases by municipality residents [7]. This gap is attributed mainly to the lack of visibility of local producers, insufficient distribution infrastructure and informational barriers faced by consumers.

The Brasov municipality administers five agri-food markets where more than 100 local producers operate – constituting the main direct farmer–consumer marketing infrastructure in the region. The local legal framework is defined by Local Council Decision No. 428/2022, which regulates categories of traders entitled to conduct commercial activities at markets organised by the municipality. FoodCLIC institutional partners in Brasov are Brasov City Hall and Transilvania University of Brasov, with the project involving 17 municipal departments, the Market Services Administration, DSVSA and nine local consumer groups [6].

Brasov's vision, aligned with the Milan Urban Food Policy Pact (MUFPP), is to build an inclusive, resilient, safe and diverse food system that ensures healthy and accessible food for all residents [14]. The Strategy for Agri-food Sector Development (2020–2030) sets as a priority the improvement of links between local producers and consumers, through shortening supply chains and improving direct marketing conditions.

In the specific Romanian context, digitalization of the agri-food sector is at an early stage. According to a report by the National Institute of Statistics (2023), only 12% of individual agricultural holdings with direct sales have their own website or presence on e-commerce platforms. This proportion is far below the European average of 31% and reflects both financial and technical barriers, as well as the absence of coherent public policies to support the digitalization of

small producers. The FoodCLIC Brasov intervention addresses this structural deficit through a free and participatory model, replicable at national scale [6].

Literature Review

Short Food Chains: Definition, Typology and Benefits

Short food chains (SFCs) are supply systems in which the number of intermediaries between producer and consumer is minimal or nonexistent [16]. The definition proposed by Kneafsey et al. (2013) for the European Commission distinguishes between SFCs with "zero intermediaries" (direct farm sales, farmers' markets, home delivery) and SFCs with "one intermediary" (local cooperatives, specialist shops, institutional canteens) [12].

In the European context, SFCs have gained major political recognition. The Farm to Fork Strategy (2020) targets 25% of EU agricultural land under organic farming by 2030 and supports the expansion of proximity markets. EU Regulation 1305/2013 on rural development includes specific support for SFCs as a tool for increasing the economic viability of small farms and reducing food waste [11].

The literature demonstrates that SFCs generate multiple categories of benefits: economic (higher incomes for farmers, more competitive prices for consumers, recirculation of capital in the local economy), social (rebuilding the social bond between community and rural areas, strengthening the cultural identity associated with local products) and environmental (reducing packaging and carbon footprint associated with long-distance transport, stimulating organic and agroecological farming) [12, 11].

Informational Asymmetry as a Barrier to Local Food Purchasing

Informational asymmetry between producers and consumers is recognized in the economic literature as a fundamental barrier to the functioning of local agri-food markets. Consumers lack sufficient information about who produces, where and how the food they purchase is produced. According to the 2022 Eurobarometer (n=26,000), 73% of European consumers want more transparency regarding food origin, and 78% identify perceived quality as the main reason for local food purchasing [4].

The psychological distance between consumer and producer, accentuated by modern industrial food systems, creates a cognitive disconnect that diminishes affinity for local products. The consumer sees the product, but cannot associate it with the producer who grew or cultivated it – they do not know the farm, the family, or understand the production process. Transparency about product origin amplifies by 23% the "halo of authenticity" identified by Tregear (2011), through which

consumers attribute superior qualities to local products compared to industrial ones [19].

Conventional chains involve 5–7 intermediaries, with farmers sometimes receiving less than 20% of the final shelf price. Thin margins make investment in digitalization and marketing prohibitive for small farmers, perpetuating a trap: precisely those who would benefit most from digital visibility are those who cannot afford to build it [20].

Digital Tools for Short Food Chain Development

Digitalization offers tools with high potential for reducing informational asymmetry in local agri-food markets. Online platforms, farmer websites and QR codes enable the provision of detailed information about origin, production methods and the farm's "story" directly at the point of sale [22]. The impact is documented in several national contexts.

The French platform LocalSol (2018–present), with over 3,500 participating farmers and integrated QR codes at markets, generated a 34% increase in direct sales over two years and a consumer retention rate of 61% [26]. The Italian Campagna Amica network (Coldiretti), with 1,400 farmers' markets and digital profiles accessible via QR, is studied by FAO as a European best practice in the field [10]. RegioApp from Baden-Württemberg (Germany) was adopted by 1,200 local producers, allowing consumers to access farm information by simply scanning a QR code at the market. LocalHarvest.org in the USA brings together standardized web profiles for 30,000+ farms and generates 2 million visitors per month, demonstrating the scalability of the model [2].

The conceptual framework of the intervention also fits within the logic of the "Flywheel Markets Framework", developed in the FoodCLIC Brasov context to describe the dynamics of local agri-food markets. According to this framework, information transparency (ensured by websites and QR codes) acts as a trust accelerator, which in turn increases the frequency of local purchases, generating better incomes for farmers, allowing them to invest in product quality, attracting more consumers – a virtuous cycle of growth and consolidation of the short food chain [7].

The "social proof" effect generated by QR codes at market stalls has been documented in qualitative studies from several European agri-food markets: the visible curiosity of consumers scanning the QR code attracts other buyers, amplifying the promotional effect of the digital tool [17].

Consumer Psychology and the Local Food Purchasing Decision

Several empirically grounded psychological theories explain the mechanisms through which knowing the farmer influences purchasing behaviour. Social Identity Theory (Tajfel & Turner, 1979) demonstrates that consumers identify with the local community, and purchasing from local farmers becomes an act of identity

affirmation: "I am from Brasov, I support Brasov farmers" [23]. The QR code materialises this identity connection, providing it with verifiable informational substance.

The Theory of Planned Behaviour (Ajzen, 1991) shows that attitudes towards local products, social norms ("neighbours buy local") and perceived control ("I know how to find local products") explain 68% of the variation in local purchasing intention [1]. The practical implication is clear: providing accessible information about local producers directly increases purchasing intention, by increasing the consumer's perceived control.

The "Know Your Farmer" study (Selfa & Qazi, 2005) on 400 households demonstrated that simply knowing the farmer's name and location increases the probability of return visits by 52%, rising to 67% when the consumer has access to farm images and the family's story [18]. Direct relationships with farmers increase the buyer's return rate by 40% compared to anonymous supermarket purchases, and direct connection with the food source reduces food safety anxiety by 31% [5]. Consumers are also willing to pay on average 19% more for products with clear local origin labelling, according to a pan-European study of 1,200 participants (Van Ittersum et al., 2003) [24].

Barriers to Digital Adoption among Small Farmers

The literature identifies three main categories of barriers to digital tool adoption by small farmers: financial barriers (the cost of a professional website ranges from 500 to 2,000 EUR, prohibitive for small agricultural households with slim margins); technical barriers (low digital competence, especially among older farmers, who in Romania represent a significant proportion – the average age of Romanian farmers is 57 years); and motivational barriers (resistance to change among producers with long-standing traditional direct marketing experience) [13, 8, 9].

Effective solutions in the literature combine free service, standardized structure to minimise content production effort, design for non-technical users and continuous human support. Research from Belgium, where the Voedselteams model brings together 400 farms with digital profiles and 15,000 consumer families, suggests that peer mentoring – in which early adopting farmers support more reluctant ones – is more effective than classical institutional training [2].

2.Materials and methods

2.1. Intervention Design

The action of creating websites for local farmers in the Brasov area represents Intervention 2 of the Brasov Living Lab within FoodCLIC, entitled: "Digitalization of short food chains – Using QR codes to promote local farmers in

the Brasov metropolitan area" [7]. The intervention was designed as a participatory tool, based on co-design principles, and implemented iteratively in several phases, following a Reflexive Learning Cycle (RLC) logic according to the FoodCLIC methodology [6]. The fundamental principles of the methodology establish the necessary conditions for the adoption and sustainability of the tool: (1) zero cost for the farmer – elimination of financial barriers as a prerequisite for digital inclusion; (2) standardization with flexibility – a common website structure with personalised content per farmer, so that the creation effort is minimal while the result is authentic; (3) accessibility – a web page functional on any smartphone without a special application, eliminating the technical barrier for the consumer; (4) updatability – the farmer can request content changes at any time by simply communicating with the project team, ensuring the permanent relevance of the information.

2.2. Methodological Phases

The intervention was structured in five successive phases, designed to ensure both the technical quality of the product and its adoption by farmers and consumers.

Phase 1 – Producer identification. The inventory of local farmers active in Brasov's agri-food markets was carried out in collaboration with the Brasov Market Services Administration, using existing databases. Over 100 active producers were identified across the five municipal markets, of which 30 were selected for the first implementation phase, based on criteria of product category diversity and availability to participate in co-design.

Phase 2 – Participatory co-design. Individual co-design workshops were organised with the selected farmers, with an average duration of 45–60 minutes per farmer. In these workshops, farmers decided what content they wished to present, what photographs to include and what product information they considered relevant for consumers. Photographs were taken in the field, at the farm or at the market stall, ensuring visual authenticity. The participatory approach ensured that websites reflect the authentic voice and identity of each producer, rather than an impersonal template.

Phase 3 – Website creation. A standardized six-section thematic structure was designed and applied, optimized for mobile devices and with Google Maps integration, using the Google Sites platform for accessibility and compatibility: (1) Home – farm photographs, landscapes, animals, seasonal produce; (2) About Us – farm history, mission, values, family team; (3) Products – list of available products, production methods, certifications and standards; (4) Services & Experiences – guided tours, workshops, farm events for visitors; (5) Media Gallery – photos and videos of farm activity; (6) Contact – integrated Google Maps, opening hours, phone number, contact form.

Phase 4 – QR code generation and display at market stalls. A unique QR code was generated per farmer, printed on weather-resistant material and displayed at the market stall in a visible location. Farmers received a brief 15-minute training on using and promoting the QR code in interactions with customers, with emphasis on simple verbal communication ("Scan the code and see our farm").

Content quality was ensured through a set of minimum standards established jointly with farmers during the co-design phase: a minimum of 5 quality photographs of the farm or products, complete information on production methods, specification of certifications or ecological practices, a functioning Google Maps map and a valid telephone number. These standards aimed to ensure that web pages provide sufficient information for the purchasing decision, avoiding superficial content that might erode consumer trust.

Phase 5 – Iterative evaluation and monitoring. A web traffic monitoring system was implemented via Google Analytics (number of visits, access source, device used, session duration). Semi-structured qualitative interviews with farmers and consumers were conducted at 4–6 week intervals post-launch. Website content was iteratively adjusted based on collected feedback, in a continuous improvement cycle.

Figure 1. Local farmer at the stall in Brasov Agri-food Market – the context of the FoodCLIC digitalization intervention (photo: project team, 2024)

2.3 Sample and Implementation Framework

The first implementation phase included 30 local farmers, selected from the pilot neighbourhood of Stupini – an area with agricultural tradition in the Brasov metropolitan area – and from the central markets of Brasov municipality. Table 1 shows the distribution of participating farmers by product category.

Table 1. Distribution of participating farmers in Phase 1 by product category

Product category	No. of farmers	Examples of producers	Main market
Seasonal vegetables	10	Vulcanean Lenuta – Stupini	Bartolomeu Agri-food Market
Fruit and natural juices	6	Livada Craitoru – Voinesti	Sfatul Square Market Brasov
Artisan cheeses	5	Neagoici Constantin – Vama Buzaului	Brasov Agri-food Market
Honey and bee products	5	Producers from the sub-Carpathian area	Various municipal markets
Mountain dairy products	4	Producers from Holbav, Vale	Brasov Agri-food Market

All participants are active farmers with a regular presence at municipal market stalls in Brasov and at least 3 years of direct marketing experience. The diversity of product categories was considered an important criterion for validating the model across varied production and marketing contexts.

3. Results and discussions

3.1. Quantitative Results of Phase 1

At the end of the first implementation phase, 30 free websites were created for local farmers active at Brasov markets. All websites follow the standardized six-section structure, are optimized for mobile phones and are each associated with a unique QR code displayed at the farmer's stall [7]. The main quantitative results of the intervention are presented in Table 2.

Table 2. Quantitative indicators of FoodCLIC Brasov Intervention 2, Phase 1

Indicator	Value	Notes
Web pages created (Phase 1)	30	Coverage: 30% of active producers in municipal markets
Cost per farmer	0 EUR	Fully covered by the FoodCLIC project
Standardized sections per website	6	Identical structure, personalised content
QR codes generated and displayed	30	1 per farmer, printed on weather-resistant material

Average co-design session duration	52 min	Range: 30–90 minutes, depending on complexity
QR code usage training duration	15 min	Practical session at the stall, with demonstration
Average website creation time	4–6 hours/site	Including photo editing and Google Maps integration

Figure 2. Home page of the "Zmeura Bio Brasov" website – an example of local producer presentation (source: Google Sites, 2024)

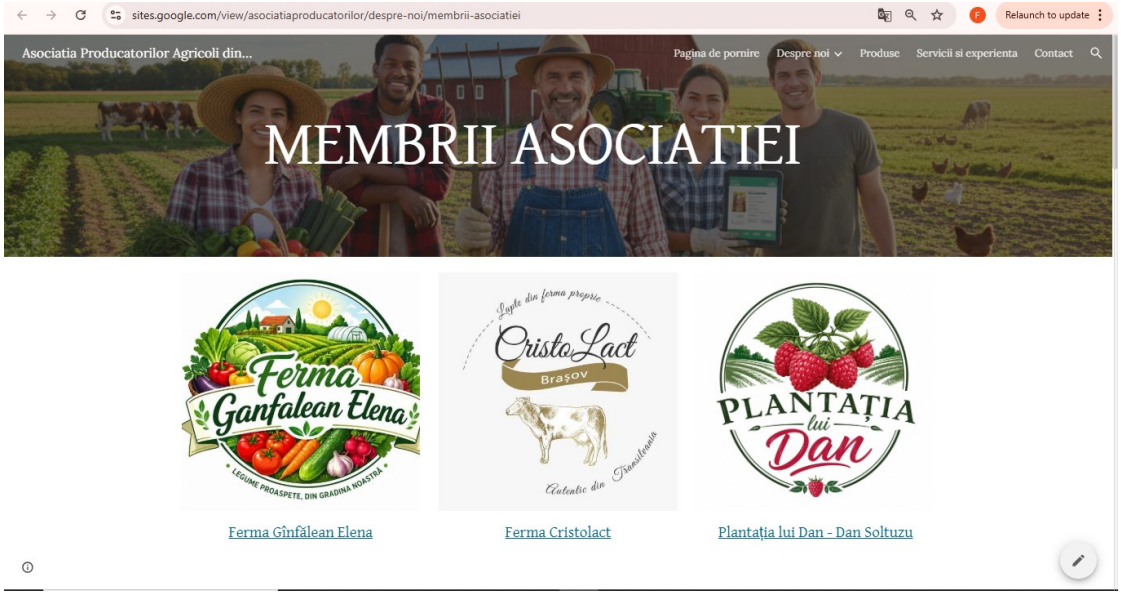

Figure 3. The "Association Members" section of the joint portal – logos of farms participating in FoodCLIC Brasov Intervention 2 (source: Google Sites, 2026)

Ferma Vulcănean Lenuța | Ferma Cojocar Gheorghe | Zmeura Bio Brașov

Ferma Podaru | Cosgarea Mircea – Vegetables | Microferma Cirica Daniela

Figure 4. Examples of logos created for local farmers in the Brasov metropolitan area within FoodCLIC Intervention 2 (source: Google Sites, 2026)

3.2 Adoption from the Farmers' Perspective

Initial field observations (RLI Brasov, FoodCLIC D3.2, 2024) indicate positive adoption by participating farmers. They appreciated the opportunity to present their farm in a professional manner, without prior technical knowledge or any costs. Perceived benefits include professional online identity, free product promotion and the foundations for customer loyalty.

Real challenges were also identified, to which the implementation team associated concrete mitigation measures: (1) the limited digital literacy of older farmers – addressed through continuous human support from the Transilvania University team and on-request content updating without requiring direct technical involvement from the farmer; (2) difficulty in keeping content seasonally updated – resolved through a quarterly notification system and a partnership with volunteer students from Transilvania University; (3) resistance to change among some farmers with well-established traditional practices – overcome through on-site demonstrations and organised peer learning, with early adopting farmers positively influencing more reluctant colleagues.

3.3 Observed Effects on Farmer–Consumer Interaction

Qualitative observations from Brasov markets indicate that the presence of a QR code at the market stall generates spontaneous conversations among buyers – a "social proof" effect that attracts new curious customers. Consumers who scan the QR code and access the farmer's web page acquire information that transforms the commercial transaction from an anonymous exchange into a personalised interaction, based on knowledge of the producer.

Qualitative interviews with consumers also revealed a post-visit "recall" effect: consumers who scanned the QR code and visited the farmer's website reported "remembering" that farmer on their next market visit, identifying them more easily and returning to their stall. This visual memory effect – amplified by photographs of the farm and products – contributes to consumer loyalty without requiring any additional action from the farmer.

Farmers also reported that the presence of the QR code at the stall had encouraged them to talk more with customers about the farm and their products – an unexpected side effect, in which the digital tool stimulated interpersonal communication rather than replacing it. This observation suggests that digitalization of the short food chain does not erode the personal farmer–consumer relationship, but amplifies it by creating a conversational starting point.

3.4 Web Traffic and Monitoring Data

In the first eight weeks following the launch of websites and display of QR codes, preliminary web traffic data collected via Google Analytics showed that website visits are predominantly from mobile devices (92% of visits), confirming the correctness of the mobile optimization decision. The average website session duration was 2 minutes and 34 seconds, suggesting an adequate level of consumer engagement with the available content.

The geographical distribution of visits confirms the local character of the initiative: 78% of visitors originate from Brasov municipality and the neighbouring communes of the metropolitan area. This geographical concentration is consistent with the intervention objective of building direct connections between local producers and consumers from the same region. A proportion of 22% of visits come from other cities or countries, suggesting a potential tourist interest – consumers planning visits to Brasov who wish to identify local producers in advance [7].

3.5. Discussion

The results obtained in the first phase of the FoodCLIC Brasov intervention confirm the central research hypothesis: creating free websites for local farmers reduces informational asymmetry and rebuilds the farmer–consumer connection,

digitally mediated through QR codes. The preliminary data are consistent with predictions from psychological theory and empirical evidence from the international literature.

The "Know Your Farmer" effect (Selfa & Qazi, 2005) [18] manifests in the Brasov context, confirming the transferability of the model from a North American to an Eastern European context. This convergence is relevant to comparative research in alternative food systems, suggesting that the psychological mechanisms of trust and identity underlying the preference for local products are culturally robust.

A particular aspect of the Romanian context is the high average age of farmers (57 years nationally) and the relatively low level of digital literacy among agricultural producers. The Brasov model addresses this challenge by "delegating" the technical effort to the project team: the farmer is not asked to learn to build or administer their website, but merely to participate in co-design and to display the QR code. This marks an important difference from models in Western Europe, where the degree of digital autonomy among farmers is higher.

An important dimension of the intervention, deserving distinct attention in future research, is digital equity at the consumer level. QR codes presuppose access to a smartphone with a functioning camera and to an internet connection – resources not universally available across all population segments, especially among the elderly and low-income groups. The FoodCLIC Brasov intervention complements the digital approach with the physical presence of farmers at their stalls and with poster-type displays carrying basic information, ensuring that information is accessible even to consumers without smartphones [7].

Financial sustainability after the project ends remains a significant challenge, identified in the international literature as a vulnerable point of digitalization interventions funded through projects [13, 25]. The proposed solution – transfer to the Market Services Administration and integration into the municipal budget – is consistent with the logic of local public administration, but requires political will and explicit budget allocation. This dimension should be explored in the next research phase, including through cost-benefit analysis of the model from the perspective of local government.

From a local public policy perspective, the intervention demonstrates the value of the tripartite administration–university–farmers partnership in building agri-food digitalization tools. Brasov City Hall provided access to market infrastructure and the producer database; Transilvania University contributed technical and methodological expertise; and farmers brought local knowledge and authentic content. This institutional triangulation is essential for the long-term sustainability

of the intervention and represents a model of cross-sectoral cooperation relevant to other municipalities in Romania and Europe [14].

The Brasov model also presents potential for scaling and transfer. At national level, the platform could be integrated into the existing information systems of agri-food markets administered by municipalities across Romania. At European level, the co-design + free website + QR methodology is simple enough to be replicated in any of the 230+ MUFPP member cities, with minimal adaptations to the local context [14].

3.6. Limitations and Future Research Directions

The present study has a number of limitations that must be explicitly acknowledged. First, the data collected are predominantly qualitative and relate to a first implementation phase with a sample of 30 farmers. The absence of a control group and rigorous quantitative measurements of economic impact (sales growth, price changes, evolution of loyal customer numbers) limits the conclusive power of the preliminary observations.

Second, the short monitoring period (8 weeks from website launch) does not permit the assessment of the durability of the observed effects. It is possible that the "novelty effect" of QR codes may diminish over time, if not accompanied by regular content updating and active farmer communication with customers.

Third, the farmer sample selected in Phase 1 includes predominantly producers with an initial openness to innovation, which may introduce a selection bias into the observations. Extension to more reluctant farmers – the objective of Phase 2 of the intervention – will test the robustness of the model under more challenging adoption conditions.

Future research directions include: (1) a longitudinal study (12–24 months) with quantitative measurements of the economic impact on farmer incomes and consumer loyalty; (2) comparative analysis of the Brasov model with similar interventions in other FoodCLIC cities; (3) assessment of post-project financial sustainability through cost-benefit analysis from the local government perspective; (4) expansion of the platform to a dedicated mobile application for an improved user experience.

4. Conclusions

The action of creating free websites for local farmers in the Brasov metropolitan area, implemented within the European FoodCLIC project, demonstrates that the digitalization of short food chains is a simple tool with complex impact. The main conclusions of the paper are as follows:

(1) A QR code at the farmer's stall is not merely a technological tool, but an act of transparency that rebuilds trust in modern food systems, reducing informational asymmetry and the psychological distance between producers and consumers.

(2) The convergence of evidence from psychology, rural economics and sociology confirms that the farmer's identity – accessible through the website – increases the perceived quality of products, fosters consumer loyalty and sustains local economies, with documented effects across multiple European and North American contexts.

(3) The participatory methodology applied – co-design with farmers, simplified training, standardized structure with personalised content, zero cost – represents a replicable model, adapted to the specificities of small producers in the mountain regions of Romania, exportable to other European contexts with minimal adaptations.

(4) The digital inclusion of vulnerable farmers – through the elimination of financial and technical barriers and the delegation of technical effort to the project team – constitutes a necessary condition for the participation of small producers in the information economy of the twenty-first century.

(5) The digitalization of the short food chain does not erode the personal farmer–consumer relationship, but amplifies it: the digital tool creates a conversational starting point that stimulates direct interactions at the market stall.

(6) The 30 websites created in Phase 1 of the intervention represent the first stone of a regional digital agri-food ecosystem, with potential for scaling at national level and for transfer as a European best practice within the MUFPP network (230+ member cities). The contribution of the Brasov model to the international literature lies in demonstrating the feasibility of a free, participatory and sustainable digital tool in an emerging economy context in Central and Eastern Europe, thus extending the geographical and economic frontiers of previous research, predominantly focused on Western European and North American contexts. The next research phase will focus on quantifying the economic impact of the intervention and exploring post-project financial sustainability.

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