

What Do Residents Value in Mobile Grocery Stores? -Exploring the Value of Welfare Roles from Petition Data-

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1. Introduction

Approximately 60% of Japan's total land area is occupied by mountainous and hilly regions. In these areas, food availability has been deteriorating due to ongoing closures and discontinuation of grocery stores caused by population decline. These circumstances have become a particularly serious problem for older adults who face difficulties using automobiles, as it directly impacts how they can procure food (Takahashi, 2020).

According to the National Survey on Food Access Difficulties conducted by the Ministry of Agriculture, Forestry and Fisheries, various municipalities are implementing or supporting diverse initiatives to address food access difficulties. These initiatives include community buses, shared taxis, mobile grocery stores, and home delivery services (Ministry of Agriculture, Forestry and Fisheries, 2024). Among these efforts, mobile grocery stores have been increasing year by year and are recognized as highly valuable for food supply provision for local communities (Ohashi, 2017).

This research is organized as follows. Section 2 reviews previous studies and discusses the multiple roles of mobile grocery stores, particularly their welfare-related functions in mountainous and hilly areas. Section 3 presents the results of a case study analysis using petition data related to a mobile grocery store in Hino Town, Tottori Prefecture. Finally, Section 4 concludes by discussing the future roles and sustainability of mobile grocery stores in local communities based on the findings of the case study.

2. Roles of Mobile Grocery Stores

Mobile grocery stores are receiving increased attention as a countermeasure for municipalities' food access difficulties, and various studies have found that they not only serve as food suppliers but also fulfill multiple additional roles. These include monitoring older adults' well-being ("watch-over" role) and providing opportunities for communication between users and vendors (Kuramochi, 2022). In other words, while mobile grocery stores may offer a more limited product selection than physical stores or home delivery services, they have the advantage of enabling users to select products in person. Additionally, they play an important welfare role by facilitating opportunities for social interaction. Moreover, because mobile grocery stores stop near users' residences, they reduce the physical burden of traveling to shops and decrease the psychological burden associated with making advance orders or requesting transportation assistance, making them a particularly effective shopping method for older adults (Fusayasu, 2016).

In contrast, when considered from the perspective of profitability, mobile grocery stores face significant challenges in mountainous and hilly areas where population decline is severe. These areas have limited shopping opportunities and require long travel distances, resulting in high fuel costs, which makes it difficult for mobile grocery stores to maintain profitability (Iwama et al., 2016).

Therefore, it is essential to raise communities' awareness about the various roles of mobile grocery stores to foster a sense of "market/mutual support behavior" among residents, particularly those who depend on such services, to ensure their continued operation (Kurokawa, 2015).

This study clarifies the specific roles of mobile grocery stores that residents value most and to explore the future roles and optimal approach for mobile grocery stores in mountainous and hilly areas.

3. What Do Residents Expect from Mobile Grocery Stores?

1) Study Site and Analytical Data

This study focuses on a mobile grocery store operating in Hino Town in the Tottori Prefecture, a typical mountainous and hilly area. As of 2020, Hino Town had a population of 2,907 people, and in recent years, the population has been declining by approximately 100 people per year. The proportion of the population aged 65–74 (early-stage older adults) is 20.7%, while those aged 75 and above (late-stage older adults) account for 29.9%, indicating that the town is facing a combination of population decline and a rapidly aging society.

The mobile grocery store is operated by a local store within the town and circulates throughout the entire area twice a week. However, when the store owner who had been managing the mobile grocery store announced his retirement due to old age at the end of September 2022, the future continuation of the service became uncertain. In response, a total of 386 petitions requesting mobile service continuation were submitted to the town office by local residents. These petitions

included free-description sections where petitioners provided detailed reasons for requesting mobile grocery store service continuation and explained its necessity in their own words.

In this study, I assumed that the content written in these free-description sections reflected the roles that petitioners expected from the mobile grocery store and the factors they considered most important when using the service. The petition data provided by the Hino Town Office were analyzed based on this assumption. Out of the 386 petitions submitted, 173 petitions (44.8% of the total) included entries in the free-description sections for the analysis.

2) Analysis Results

Among the 173 petitions analyzed in this study, approximately 70% were submitted by women, and about 50% were from late-stage older adults (aged 75 and over) (Table 1). This indicates that mobile grocery stores are a significant and convenient means of procuring food, particularly for women, who are often responsible for cooking in the household, as well as for late-stage older adults whose ability to live independently may be declining.

Next, text mining approaches were applied to the text data extracted from the petitions' free-description sections. Text mining is a method that divides text into its smallest meaningful units based on parts of speech and other linguistic features, enabling the identification of frequently used words and patterns.

Words that frequently appeared together in the petitions were grouped and categorized to identify the roles of mobile grocery stores that were most frequently discussed within each group (Figure 1).

As a result, four groups emerged. In Group 1 (frequent words: "Council," "Discussion," etc.), residents expressed the need for active municipal council discussions to ensure mobile grocery store services' continuation. In Group 2 (frequent words: "Daily Life," "Community," "Shopping," etc.), residents emphasized that mobile grocery stores were essential support for daily life in the local community, extending beyond the mere supply of groceries. In Group 3 (frequent word: "Watch-Over"), petitioners' opinions stressed the importance of mobile grocery stores' monitoring role, particularly in ensuring older adults' safety and well-being. Finally, in Group 4 (frequent words: "Elderly," "Shopping," etc.), residents emphasized that mobile grocery stores play a critical role in providing shopping opportunities specifically for older adults.

Table 1: Overview of petition data (respondents with free-description sections, n = 173)

Item	Average	S.D.
Age	73.6	13.5
Household Size	2.4	1.2
Item	Number of Cases	Percentage
Male	53	30.6%
Female	120	69.4%
Households of Early-Stage Older Adults (Aged 65–74 years old)	46	26.6%
Households of Late-Stage Older Adults (Aged over 75 years old)	93	53.8%
Other Households (Under 65 years old)	34	19.7%
Single-Person Households	40	23.1%
Multi-Person Households	133	76.9%
Residents Living Near Grocery Stores	70	40.5%

Source: Created by the author based on petition data.

Note: The classification of Households is based on the age of the household head.

4. Conclusion

This study analyzed petition data submitted by residents of Hino Town requesting mobile grocery store services' continuation to clarify the roles that residents who rely on the service expect from mobile grocery stores. The results revealed that, in addition to the core role of supporting community living environments through food supply, mobile grocery stores are also highly valued for their "monitoring" role (e.g., checking on older adults' well-being) and "provision of shopping opportunities for older adults." These findings indicate that local residents consider mobile grocery stores' various welfare-related roles to be particularly important.

Therefore, it is essential to develop mobile grocery store operations that are aligned with these community needs. At the same time, it is essential to ensure that more residents understand that mobile grocery stores fulfill numerous welfare roles beyond simply providing groceries. By fostering a community-wide "mobile market support" mindset, encouraging residents to collectively sustain these services, while also seeking business models that can ensure profitability, I contend that it is possible to maintain stable food procurement environments in local areas.

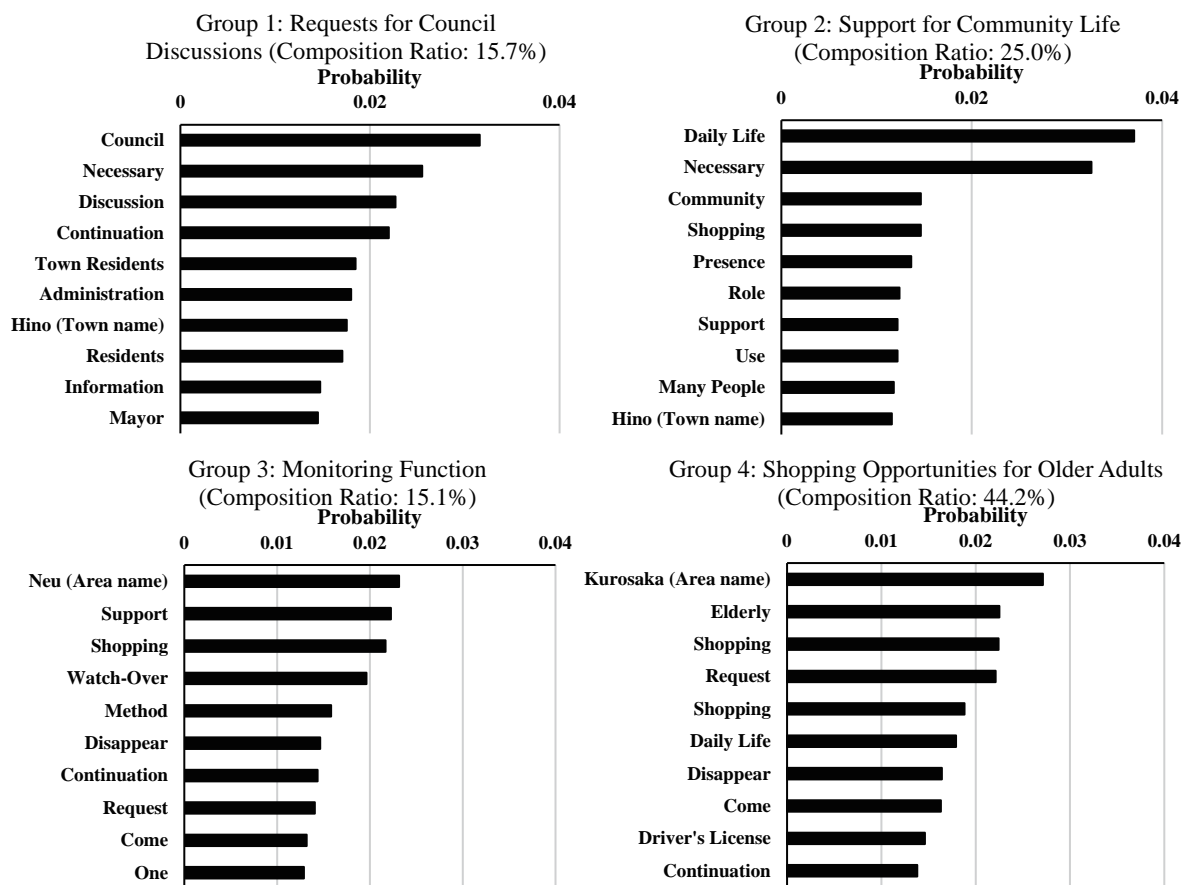


Figure 1: Frequently appearing words in each group

Note: This study is based on the petition data provided under a comprehensive partnership agreement signed in March 2023 between Hino Town and the Policy Research Institute, Ministry of Agriculture, Forestry and Fisheries. The content introduced here is partially derived from Maruyama et al. (2025). Please refer to Maruyama et al. (2025) for further details.

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