Application of BUMDES and MSME Technology through Collaborative Model Village Marketplace Design: Rasch Model Analysis of West Sumbawa Community Perceptions

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Abstract: West Sumbawa Regency consists of 8 sub-districts, 57 village areas, and seven sub-districts. In the district area, institutionally, 57 Village-Owned Enterprises (BUMDES) have been formed, which are spread across each sub-district. BUMDes is a business entity that is strongly supported by social capital, in addition to financial capital from the Village Revenue and Expenditure Budget (APBDes), which includes all efforts to strengthen the rural economy and is required to be the answer to problems of improvement economy and community welfare in the village. BUMDes is a means of driving the economy through various types of business in accordance with the village's potential. BUMDes in Taliwang District, West Sumbawa Regency, has a Savings and Loans Business Unit (USP), procurement of Office Stationery (ATK), sales of Fuel Oil (BBM), procurement of fertilizers and agricultural medicines, trade in agricultural and marine products, as well as communication services and transportation. The BUMDes in Maluk District, West Sumbawa Regency, have various businesses such as village stalls, market units, building management, boarding houses, and waste levies. Lastly, BUMDes in Seteluk District, West Sumbawa Regency, has economic activities in the form of distribution of necessities, Savings and Loan Business Units (USP), food crop production, plantations, animal husbandry, and fisheries, as well as mining, special energy, and management of minerals C. Apart from that, BUMDes in Seteluk District, West Sumbawa Regency, has several superior products or commodities such as freshwater fish, livestock, and Trigona honey.

Keywords: BUMDes; MSMEs; Collaboration Model; Village Marketplace; West Sumbawa

Introduction

BUMDes is a business entity that is strongly supported by social capital, in addition to financial capital from the Village Revenue and Expenditure Budget (APBDes), which includes all efforts to strengthen the rural economy and is required to be the answer to problems of improvement economy and community welfare in the village. BUMDes is a means of driving the economy through various types of business in accordance with the village's potential (Pol Metra, 2023). BUMDes in Taliwang District, West Sumbawa Regency, has a Savings and Loans Business Unit (USP), procurement of Office Stationery (ATK), sales of Fuel Oil (BBM), procurement of fertilizers and agricultural medicines, trade in agricultural and marine products, as well as communication services and transportation. The BUMDes in Maluk District, West Sumbawa Regency, have various businesses such as village stalls, market units, building management, boarding houses, and...
waste levies. Lastly, BUMDes in Seteluk District, West Sumbawa Regency, has economic activities in the form of distribution of necessities, Savings and Loan Business Units (USP), food crop production, plantations, animal husbandry, and fisheries, as well as mining, special energy, and management of minerals C. Apart from that, BUMDes in Seteluk District, West Sumbawa Regency, has several superior products or commodities such as freshwater fish, livestock, and Trigona honey (Ibrahim et al., 2017).

BUMDes, which are established according to the natural wealth potential of a village, are expected to make a major contribution to the Village’s Original Income (PADes) to support the course of development and equalize the welfare of the people in the village, according to Mr. in a year (Penapereporter). However, the majority of BUMDES in their operational implementation experience various problems and obstacles that occur in the management carried out by BUMDES administrators, including miscommunication between administrators, which has an impact on the BUMDES management process, the occurrence of administrator vacancies, the relationship between BUMDES administrators and the Village Government is not good. BUMDES business units need to be running better, and the village government has no capital investment in BUMDES as initial capital to run operations. This results in BUMDES failing to run well and tending to be inactive. Apart from that, the collapse and demise of economic activities carried out by the majority of BUMDes were caused by several factors, including limited types of business being run, limited equipment and facilities to run BUMDES economic activities normally, limited Human Resources (HR) who were actively involved in managing BUMDes, and low community participation due to their low level of knowledge in carrying out managerial and entrepreneurship in BUMDes.

Most BUMDes carry out micro, small, and medium economic activities. In other words, BUMDes are Micro, Small and Medium Enterprises (MSMEs) whose economic activities are carried out by the village government according to Permendesa PDTT No. 4 of 2015 concerning the Establishment, Management, and Dissolution of Village-Owned Enterprises, has objectives including 1) improving the village economy, 2) optimizing village assets so that they are useful for village welfare, 3) increasing community efforts in managing existing economic potential in villages, 4) developing business cooperation plans between villages and with third parties, 5) creating opportunities and market networks that support the public service needs of residents, 6) creating employment opportunities, 7) improving community welfare through improving public services, growth and equalizing the village economy, and 8) increasing village community income and original income.

On the other hand, private sector Micro, Small, and Medium Enterprises (MSMEs) are very important in the local economy and rural development. Micro, Small, and Medium Enterprises (MSMEs) organized by the government, such as BUMDes and those carried out by the private sector, can act as a driving force for the economy and a safety valve in absorbing labor. The main challenges faced by micro, small, and medium enterprises (MSMEs) in West Sumbawa Regency are very complex because they are related to financial resources, human resources, provision of raw materials, and marketing. For this reason, a collaboration model between BUMDES and MSMEs at the village level is needed through a Village Marketplace application design that can be used together within the framework of this collaboration model. This is because one of the factors that can increase BUMDes income is entrepreneurial networking, both networks between BUMDes managers as an effort to carry out evaluation and innovation, as well as networks that facilitate product services to consumers such as Marketplace applications (Ida et al. et al., 2023). Digitalization of finance and marketing for BUMDes is a very important and urgent thing to do immediately to realize the existence of BUMDes as the main driving force of the village economy (Omi et al. A., 2022). This is reinforced by research by Nora Lelita (2022), which states that business progress and BUMD’s income can be increased by introducing digital marketing and business management that expand through e-commerce and marketplace applications.

### Method

West Sumbawa Regency consists of 8 sub-districts, 57 village areas, and seven sub-districts. In the district area, institutionally, 57 Village-Owned Enterprises (BUMDES) have been formed, which are spread across each sub-district.

<table>
<thead>
<tr>
<th>Age</th>
<th>Amount</th>
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</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>20-25</td>
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<td>2</td>
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<tr>
<td>26-30</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>31-35</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>36-40</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>&gt;40</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Work</th>
<th>Amount</th>
<th>code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASN (PNS)</td>
<td>5</td>
<td>A</td>
</tr>
<tr>
<td>Private sector worker</td>
<td>4</td>
<td>W</td>
</tr>
<tr>
<td>Student/Students</td>
<td>20</td>
<td>m</td>
</tr>
<tr>
<td>Businessmen</td>
<td>5</td>
<td>P</td>
</tr>
<tr>
<td>Other Jobs</td>
<td>2</td>
<td>L</td>
</tr>
</tbody>
</table>
Instrument

Table 2. Research Instrument

<table>
<thead>
<tr>
<th>Questionnaire questions</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>This application model needs to be developed in the district. West Sumbawa to expand the marketing reach of regional products and empower BUMDes</td>
<td>Q1</td>
</tr>
<tr>
<td>Collaboration between MSMEs and BUMDes is needed to use this application so that village marketing management can run with a one-stop scheme.</td>
<td>Q2</td>
</tr>
<tr>
<td>As a marketing account management representative at the Village level, you must involve one of the BUMDes administrators so that MSMEs focus on production only.</td>
<td>Q3</td>
</tr>
<tr>
<td>Another alternative is needed as a representative/marketing agent at the village level other than the BUMDes Management, in anticipation of the BUMDes being inactive.</td>
<td>Q4</td>
</tr>
<tr>
<td>This application is expected to make it easier for MSMEs to market their products to the public so that they can grow and develop in the future.</td>
<td>Q5</td>
</tr>
<tr>
<td>Hopefully, this application can support and empower BUMDes administrators to be active and play a role in the regional economy in their respective villages.</td>
<td>Q6</td>
</tr>
<tr>
<td>Rating and review system for products and shops/UMKM</td>
<td>Q7</td>
</tr>
<tr>
<td>Ability to easily upload product photos</td>
<td>Q8</td>
</tr>
<tr>
<td>Complete and detailed product information (description, price, ingredients, etc.)</td>
<td>Q9</td>
</tr>
<tr>
<td>Search facility based on product category</td>
<td>Q10</td>
</tr>
<tr>
<td>Filter price, location, and popularity</td>
<td>Q11</td>
</tr>
<tr>
<td>Search facility based on shop/UMKM name</td>
<td>Q12</td>
</tr>
<tr>
<td>A variety of secure payment methods to choose from</td>
<td>Q13</td>
</tr>
<tr>
<td>Ease of tracking order and delivery status</td>
<td>Q14</td>
</tr>
<tr>
<td>Automatic confirmation after purchase</td>
<td>Q15</td>
</tr>
<tr>
<td>Chat directly with the seller for product consultation</td>
<td>Q16</td>
</tr>
<tr>
<td>Community space to share experiences and tips</td>
<td>Q17</td>
</tr>
<tr>
<td>Notifications about special offers and promotions</td>
<td>Q18</td>
</tr>
</tbody>
</table>

Result and Discussion

Reliability

Reliability is a value that shows how trustworthy an instrument is; when the instrument is used repeatedly, the results will be consistent and stable (Yusup, 2018). The rash model has the advantage of being able to analyze the reliability of people, namely respondents, and the reliability of the items or research instruments used. An item is said to be reliable when the value is more than 0.67 (Mulyanti et al., 2022; Sumintono & Widhiarso, 2013). Based on the results of the analysis in Figure 1a, it is known that the person reliability value is 0.79, so it can be concluded that the respondent gave a reliable and acceptable answer. Meanwhile, Figure 1b shows the item reliability value. From the results of the analysis, the item reliability value is 0.70, this shows that the instrument used is reliable, that is, the instrument can be trusted with results and is consistent and stable when used repeatedly.

Separation

Based on the results of the analysis above, a separation value was also obtained; the separation index identifies the division of subject groups into items and items. To determine the division of subject groups into items, the following function can be used: (Bond & Fox, 2013).

\[
H = \frac{\left(4 \times \text{separation}\right) + 1}{3}
\]

(1)

\[
H = \text{Person stratum value}
\]
In Figure 1a, the separation value is 1.97, so the respondent strata value can be analyzed and it is 2.96, so it can be rounded up to 3. This shows that the respondent group can be divided into criteria, namely workers, students, and neither. Meanwhile, for the item separation value, the results of the analysis in Figure 1b are 1.02, so \( H = 1.69 \) and can be rounded to 2. This shows that the item strata can be divided into 2 groups, namely items that are more approved and those that are not approved.

**Figure 2.** Unidimensionality

**Unidimensionality of instruments**

Unidimensionality is an index that explains whether the instrument being developed is able to measure what is being measured. Based on Figure 2, it can be seen that the unidimensionality value is 41.9%, where the value is not far enough from the predicted value, namely 45.1%, this shows that the items have related variables and also have the same direction (Bond & Fox, 2013).

**Measure Person**

The measured index in the person measure shows the level of respondent agreement with the indicators being measured. When the measure value is more than 0.00, the respondent's tendency to agree with the instrument is high (Sumintono & Widhiarso, 2015). Based on Figure 3, we can see the level of respondents' agreement with the items. A private employee in the age range of 31-35 years, a student with an age range of 20-25 years, a private employee with an age range of more than 40 years, and an ASN with an age range of 31-35 years have the highest level of agreement with the item with a measure value of 6, 18. And students with an age range of under 20 years have the lowest level of agreement with a measure value of -5.07. Thus, it can be concluded that most of the respondents who agreed with the item were workers and students with an age range of 20 to 40 years and above. Meanwhile, respondents who disagreed with the item were students aged 20 years and under.

**Figure 3.** Measurement value of questionnaire approval responses (based on respondents)

**Figure 4.** Questionnaire approval response measure value (based on questionnaire)
Measure Items

The measured index on the measured item shows the respondent's level of agreement with the indicator item being measured. When the measure value is more than 0.00, the respondent's tendency to agree with the instrument is high (Mulyanti et al., 2022; Sumintono & Widhiarso, 2013). Based on Figure 4, it can be seen that there are 10 items that are approved by respondents and 8 items that are less approved by respondents. The items that respondents agreed with were Q3, Q2, Q17, Q7, Q5, Q1, Q4, Q6, Q8, Q10 and items that respondents did not agree with were Q11, Q16, Q18, Q9, Q13, Q15, Q12, and Q14.

1. Approved items
   a. Q3

   Item Q3 in this research is that as a representative for marketing account managers at the village level, it is necessary to involve one of the BUMDes administrators so that MSMEs focus on production only. In this item, the measure value is 1.19, this shows that according to respondents this item is very appropriate, where marketing account managers at the village level need to involve BUMDes administrators so that MSMEs can focus on production. So that later, if there is a problem, it will be easy to discuss and handle, the more parties involved in running the BUMDes program, the more support they will get, which will result in BUMDes progressing and prospering (Kumalasari & Handitya, 2023).

   b. Q2

   Item Q2 in this research is the need for collaboration between MSMEs and BUMDes in using this application so that marketing management in villages can run with a one-stop scheme. In this item, the measure value is 0.72, thus many respondents agree with this item, where collaboration between MSMEs and BUMDes can achieve common goals more effectively because it is carried out together with a focus on their respective fields so that management can be carried out in an integrated manner precisely, fast, and efficient (Nurhayati et al., 2023).

   c. Q17

   Item Q17 in this study is a community for sharing experiences and tips. This item has a measurement value of 0.72, this shows that many respondents agree with this item, so collaboration between BUMDes and MSMEs can be used as a communication space to share experiences, tips and tricks in managing the marketplace (Nurfadillah et al., 2023; Nurhayati et al., 2023; Sjafitri, 2023).

   d. Q7

   Item Q7 in this research is a rating and review system for products and shops/MSMEs. Marketplaces have the advantage of providing space for customers to provide ratings and reviews regarding the products they purchase, so that MSMEs as sellers are able to review their products independently through ratings and reviews and the higher the rating and positive reviews, the more buyers will trust the store (Trisnawati et al., 2022).

   e. Q5

   Item Q5 in this research is that this application is expected to make it easier for MSMEs to market their products to the public so that MSMEs can grow and develop in the future. The measured value for this item is 0.25. As technology advances, people can buy their needs without having to leave the house because of the marketplace, so there are many marketplace users. Because many users use the marketplace, it becomes easier for MSMEs to market their products, they can even market them just from home (Ainurzana & Jemadi, 2023; Ananda et al., 2022; Asidah et al., 2021; Goetha & Manafe, 2022; Nurfadillah et al., 2023; Puritamara et al., 2022; Wangi et al., 2023).

   f. Q1

   Item Q1 in this research is that this application model needs to be developed in the district. West Sumbawa to expand the marketing reach of regional products and empower BUMDes. This item has a measure of 0.15, which indicates that some respondents agree with this statement. This indicates that the marketplace application needs to be developed in West Sumbawa to expand the reach of product marketing, as we know that the marketplace is already used by many people, so this application is suitable to be used as a medium for selling and promoting products (Ainurzana & Jemadi, 2023; Finance & Safira, 2020; Nurfadillah et al., 2023).

   g. Q4

   Item Q4 in this research is the need for other alternatives as marketing representatives/agents at the village level other than BUMDes administrators, in anticipation if BUMDes is not active. This item has a measure value of 0.15. This shows that there are respondents who agree with this statement. So it can be concluded that a responsible person is needed to handle the marketplace, this is done to prevent and provide solutions if one day BUMDes is inactive (Novitasari et al., nd).

   h. Q6

   Item Q6 in this research is that this application is expected to support and empower BUMDes administrators so that they can be active and play a role in the regional economy in their respective villages. The
measure value for this item is 0.15 , this shows that several respondents agree with the statement that the marketplace application is expected to be able to support and empower BUMDes administrators to become more productive in helping the community's economy (Lelita, 2022; Sjafitri, 2023; Sjafitria et al., 2022).

i. Q8
Item Q8 in this research is the ability to easily upload product photos . The measure value of this item is 0.04 , this shows that few respondents agree that the marketplace makes it easy to upload product photos.

j. Q10
Item Q10 in this research is search facilities based on product categories . The measure value of this item is 0.04 , this shows that few respondents think that the marketplace makes it easy to find products based on product categories. The small number of respondents who agree may occur because while using the marketplace, they often do not find the desired product in the desired category (Fajriyati et al., nd; Metra, 2023).

2. Unapproved items
a. Q11
Item Q11 in this research is the filter price, location, and popularity . The measured value of this item is -0.21 . This shows that the filter feature is not very helpful to respondents. The price, location and popularity features on the marketplace are not yet as detailed as buyers' wishes, so marketplace application developers can develop features to make them even more diverse.

b. Q16
Item Q16 in this research is that the marketplace has a direct chat feature with sellers for product consultation. The measured value of this item is -0.21 . This shows that the direct chat feature with sellers on the marketplace has not really helped respondents due to several reasons, for example sellers are slow to respond to buyers, chats are not answered by sellers, and buyers get answers given by bots (Goetha & Manafe, 2022).

c. Q18
Item Q18 in this research is notifications about special offers and promotions . The measure value for this item is -0.21 , this shows that respondents do not agree with the existence of special notifications and promotions. Some people feel annoyed by the large number of notifications so they often turn off promotional notifications (Nurfadillah et al., 2023).

d. Q9
Item Q9 in this research is a search for complete and detailed product information (description, price, ingredients, etc.) . The measured value of this item is -0.48 . This shows that respondents are not helped by product information, this can happen because some shops sometimes only provide brief information, so buyers feel they don't know enough about the products being sold and the products are sent with quality that does not match the image (Ainurzana & Jemadi, 2023).

e. Q13
Item Q13 in this research is the choice of various safe payment methods . The measured value of this item is -0.48 . This shows that the marketplace respondents do not provide a variety of choices for what buyers want to buy, and payment methods are not very appropriate and satisfying for buyers. Payments on marketplaces are also sometimes unsafe because accounts are hacked and e-money balances are lost (Ainurzana & Jemadi, 2023).

f. Q15
Item Q15 in this study is automatic confirmation after purchase . The measured value of this item is -0.64 . This shows that the automatic confirmation feature after purchase is not very helpful for buyers. For example, a buyer buys goods on the marketplace, but there is no product purchase update yet.

g. Q12
Item Q12 in this research is a search facility based on shop/UMKM name . The measured value for this item is -0.84 . This shows that for respondents this feature is not very good, where sometimes buyers have not found products according to the desired category.

h. Q14
Item Q14 in this research is ease of tracking order and delivery status . The measured value for this item is -0.84 ; this shows that respondents have not found it easy to track order status. This can happen because some order status updates are sometimes late.

Conclusion

The BUMDes in Maluk District, West Sumbawa Regency, have various businesses such as village stalls, market units, building management, boarding houses, and waste levies. Lastly, BUMDes in Seteluk District, West Sumbawa Regency, has economic activities in the form of distribution of necessities, Savings and Loan Business Units (USP), food crop production, plantations, animal husbandry, and fisheries, as well as mining, special energy, and management of minerals. C. Apart from that, BUMDes in Seteluk District, West Sumbawa Regency, has several superior products or commodities such as freshwater fish, livestock, and Trigona honey.
Author Contributions
All authors had real contributions in writing this manuscript.

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Conflict of Interest
The authors declare that there is no conflict of interest regarding the publication of this paper

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of Service Quality on Customer Satisfaction for Tokopedia Online Marketplace in East Lombok.

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