Encourage small business environmental sustainability performance by market orientation and environmental innovation

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Abstract. This paper examines whether simultaneous market orientation and environmental innovation may drive organizations' environmental sustainability performance, with environmental innovation as a mediation. Market orientation, innovation, and performance: the relationship between the three constructs has been shown in several previous investigations, but not many results have been obtained about how it impacts the environment. We study market orientation relationships as separate variables, namely customer orientation, competitor orientation, and interfunctional coordination. The examination every market orientation component that affects organizational environmental innovation on how to change environmental sustainability performance. The method used to analyze data is modeling the structural equations of cross-sectional survey data with the SMART-PLS software, using 300 manufacture small businesses located in Indonesia. We empirically test and substantiate that not all components of market orientation have a significantly positive effect on environmental sustainability performance, but environmental innovation is an excellent mediator. Our findings show that small businesses can improve their market orientation capabilities and innovate in overcoming the challenges of environmental damage in the future, even with limited resources.

1. Introduction

Environmental sustainability performance as the organization can protect and preserve the environment, reduce energy consumption, and perform at low-cost operations [1]. Organizations with environmental fame are viewed as an essential element when an entity such as a supplier and nonprofit organization, must select an organization for inventing green partnerships [2]. Environmental responsibility makes positive associations in the individual’s mind, enhances good customer reaction of the product quality, and rates reasonable the company and its brands [3]. Environmental sustainability performance can be used as a basis for measuring organizational performance [4]. Not only in large companies but equally crucial for small businesses [5]. It is equally necessary for large companies. In a general context, the relationship between organizational performance with market orientation and innovation remains persistent across various industries [6]. However, there are gaps in research about market orientation effects on innovation [7]. Therefore, further study is required to validate its impact [8]. In overcoming
this limitation, we integrate the construct with environmental elements. These three market orientation components.

1.1. Market orientation and environmental performance

There are three elements in Narver Slater market orientation framework, namely customer orientation, competitor orientation, and interfunctional coordination. They put interfunctional coordination on their market orientation construct, which means acknowledges the importance of issues internal to the company [9]. The framework which has been validated [10] at last was preferred because of its psychometric advantages. Customer orientation is created superior value for target buyers continuously with a good understanding of them. Competitive orientation is where the organizations understands their ability to create strategies better than competitors in the long-term. Interfunctional coordination is a harmony between the creation of interfunctional dependency and functional fields' incentives and being responsive to all other divisions' requirements. Therefore, the contribution of marketing strategies (market orientation) in overall business performance is crucial for a successful business [11].

The organization with rapid response to, and a good understanding of, customer needs to work at a high standard than their competitors. A market-oriented organization can estimate the changes quickly and accurately [12]. Organizations with strong market orientations have a strong relationship with business performance. The organizations perform at high levels obtained from more significant synergies between marketing mix development and strategy and target market selection [13]. Moreover, globalization also influences the power of marketing [14]. The empirical evidence has shown that market orientation and organizational performance have positive and direct relationships [9], including small businesses. It can quickly implement the marketing plan due to the small and simple organizational so capable of transferring customer information fast. Then, does the same thing also impact on environmental sustainability performance?

Environmental sustainability performance is a managing organization by calculating its impact on the environment or improving the company's environmental situation and its systems such as reducing waste, reducing water use, and resource efficiency, even further it has become a target of environmental business or the company's ecological goals [15]. Environmental sustainability performance becomes the dependent variable because competitive advantage can be created if it can improve it. So it can be assumed that superior environmental sustainability performance can be accomplished if the organization has a strong market orientation. [16].

Customer orientations and competitor orientations entangle information obtained, and interfunctional coordination does information dissemination to all other departments in the business. All three market orientation elements are included as a detached variable in the association with environmental sustainability performance. It is therefore advanced that:

H1a. Customer orientation is positively influences environmental sustainability performance.
H1b. Competitor orientation is positively influences environmental sustainability performance.
H1c. Interfunctional coordination is positively influences environmental sustainability performance.

1.2. Market orientation and environmental innovation

The primary environmental management practices, they develop a marketing orientation [17]. Studies about customer orientation and innovative organizations show a positive relationship [18]. Customer orientation proactive and continuous to meeting customers' wants [19]. Organizations that have been proven to innovate in all their business system is Organizations that are placed the highest priority to superior customer value [20]. Therefore, important for environmentally-oriented organizations to include environmental innovation in a customer-oriented business system [21]. The effective strategy is not only customer-centered but also coping with competitors' strategies. The point is how to measure a company directly compare with its competitors [22]. Therefore, the competitor's orientation for organizations that implementing environmental management must encourage environmental innovation, and be the company's resource in surpassing competitors [21]. In response to customer needs, coordinated efforts between various departments are needed [23]. Employees in organizations
that perform integrated functions across departments have the potential to enhance their problem-solving capabilities and are creative because they perform communication across functions and work toward the common goal to facilitate responsiveness to customers. Supporting results shows a positive relationship between internal communication, a correlation between organizational innovation, and cross-functional coordination and communication [24], which:

- **H2a.** Customer orientation positively influences environmental innovation
- **H2b.** Competitor orientation positively influences environmental innovation
- **H2c.** Interfunctional coordination positively influences environmental innovation

### 1.3. Environmental innovation and environmental performance

Innovation in small businesses reflects the lack of technological competencies and environmental uncertainty for operational efficiency, emerging market niches, cost-effectiveness, new product development, and process innovation [25]. The limited capabilities and resources avoid small businesses from conducting research and development activities [26]. Besides, they can form cooperative research and development programs by building a network with industrial suppliers with concepts, technologies, and resources [26]. They can also encourage innovation as a core part of the corporate culture by following a proactive business strategy [27].

Environmental innovation is the company's capability to modify work processes to minimize environmental damage and ultimately be able to improve organizational performance, especially in environmental problems [28]. Environmental innovation is a practical and effective way to fulfill corporate responsibility for its environment [21] and allow organizations to be sustainable in the long term [29]. Companies with strong environmental innovation have more opportunities to encourage environmental sustainability performance than competitors because of their ability to manage companies that can reduce environmental damage [21]. It is therefore advanced that:

- **H3:** Environmental innovation positively influences environmental performance.

### 2. Research methodology

This study uses a survey of 300 small companies with 5 - 19 employees at random for all types of industries registered with local governments in Makassar, Indonesia. Before a formal survey, we do a preliminary survey by phone to ensure organizations that unanimous in taking part in the survey. Finally, we have 202 organizations that can be used with a response rate of 67.3%. All constructs were measured using the Likert Scale to test hypotheses. Items were translated into Indonesian first and then retranslated into English. All differences in items are reconciled and then pre-tested. Market orientation measurement consists of 3 components with 12 question items [9]. Environmental Innovation with 4 question items and tailored to small business activities [30], and Environmental sustainability performance with 4 question items [31].

### 3. Result and analysis

Model testing is using Partial Least Squares (PLS) to Structural Equation Modeling (SEM), which makes a minimal distribution assumption to generate a regression model and integrates with factor analysis [32]. PLS-SEM is liked than covariance-based SEM software because it was formerly designed for prediction objectives [33].

#### 3.1. Measurement model

Several measures evaluate the model result. The convergent validity was acquired with the average variance extracted (AVE) values exceed the requisite cut-off value of 0.5 [34], which means it's fair. Standard factor loadings surpass the suggested value of 0.50 [33]. The composite construct reliability exceeds the recommended minimum value of 0.70, so composite reliability (CR) was ensured [35]. Cronbach's alpha is larger than 0.6, which indicates a satisfactory reliability degree (See Table 1). Additionally, for the validity of discriminant, the square root of the AVE (bold diagonal elements) is higher than interconstruct correlations (See Table 2) [37].
Table 1. Result of measurement.

| Construct                  | Indicator | Path Coefficient | t      | CR   | AVE     | Cronbach | R^2 |
|----------------------------|-----------|------------------|--------|------|---------|----------|-----|
| Costumer Orientation (CO)  | CO1       | 0.795            | 17.900 |      |         | 0.805    | 0.515| 0.614| -   |
|                            | CO2       | 0.791            | 25.962 |      |         | 0.805    | 0.515| 0.614| -   |
|                            | CO3       | 0.504            | 6.341  |      |         | 0.768    | 0.505| 0.691| -   |
|                            | CO4       | 0.742            | 17.325 |      |         | 0.573    | 7.754|         |     |
| Competitor Orientation (CM)| CM1       | 0.573            | 10.820 |      |         | 0.706    | 16.715|         |     |
|                            | CM2       | 0.660            | 7.754  |      |         | 0.745    | 25.900|         |     |
|                            | CM3       | 0.706            | 16.715 |      |         | 0.791    | 25.962|         |     |
|                            | CM4       | 0.504            | 17.325 |      |         | 0.660    | 10.820|         |     |
| Interfunctional Coordination (IC) | IC1     | 0.573            | 10.820 |      |         | 0.706    | 16.715|         |     |
|                            | IC2       | 0.791            | 25.962 |      |         | 0.745    | 25.900|         |     |
|                            | IC3       | 0.504            | 17.325 |      |         | 0.660    | 10.820|         |     |
|                            | IC4       | 0.791            | 25.962 |      |         | 0.745    | 25.900|         |     |
| Environmental Innovation (EI)| EI1      | 0.691            | 14.851 |      |         | 0.704    | 17.917|         |     |
|                            | EI2       | 0.706            | 16.715 |      |         | 0.792    | 35.734|         |     |
|                            | EI3       | 0.504            | 17.325 |      |         | 0.745    | 25.900|         |     |
|                            | EI4       | 0.791            | 25.962 |      |         | 0.745    | 25.900|         |     |
| Environmental Sustainability Performance (ESP) | ESP1   | 0.867            | 54.784 |      |         | 0.868    | 41.958|         |     |
|                            | ESP2      | 0.868            | 41.958 |      |         | 0.869    | 47.759|         |     |
|                            | ESP3      | 0.869            | 47.759 |      |         | 0.869    | 41.958|         |     |
|                            | ESP4      | 0.841            | 51.581 |      |         | 0.869    | 47.759|         |     |

Table 2. Means, correlation matrix, and discriminant validity assessment.

| Construct                  | Means | SD  | Construct-level discriminant validity (correlations) |
|----------------------------|-------|-----|-----------------------------------------------------|
|                            |       |     | CO      | CM | IC | EI            | ESP |
| Costumer Orientation       | 3.993 | 0.799 | **0.718** |    |    |               |     |
| Competitor Orientation     | 3.839 | 0.836 | 0.447   | **0.710** |    |               |     |
| Interfunctional Coordination | 3.909 | 0.846 | 0.375   | 0.627 | **0.725** |               |     |
| Environmental Innovation   | 3.950 | 0.909 | 0.308   | 0.380 | 0.381 | **0.751**     |     |
| Environmental Performance  | 3.884 | 1.048 | 0.163   | 0.293 | 0.418 | 0.414 | **0.861**     |     |

Indicator-level discriminant validity (cross-loadings)

| Construct                  | Item   | CO  | CM  | IC  | EI  | ESP |
|----------------------------|--------|-----|-----|-----|-----|-----|
| Costumer Orientation       | CO1    | 0.795| 0.349| 0.341| 0.262| 0.157|
|                            | CO2    | 0.791| 0.298| 0.222| 0.245| 0.103|
|                            | CO3    | 0.504| 0.396| 0.342| 0.125| 0.006|
|                            | CO4    | 0.742| 0.506| 0.241| 0.215| 0.148|
| Competitor Orientation     | CM1    | 0.438| **0.573**| 0.244| 0.150| 0.230|
|                            | CM2    | 0.469| **0.660**| 0.395| 0.172| 0.171|
|                            | CM3    | 0.336| **0.706**| 0.495| 0.318| 0.206|
|                            | CM4    | 0.248| **0.745**| 0.546| 0.332| 0.265|
| Interfunctional Coordination | IC1   | 0.318| 0.256| **0.566**| 0.150| 0.180|
|                            | IC2    | 0.441| 0.264| **0.792**| 0.299| 0.380|
|                            | IC3    | 0.606| 0.349| **0.704**| 0.358| 0.251|
|                            | IC4    | 0.482| 0.237| **0.811**| 0.248| 0.363|
| Environmental Innovation   | EI1    | 0.300| 0.229| 0.258| **0.788**| 0.356|
|                            | EI2    | 0.160| 0.134| 0.179| **0.691**| 0.121|
|                            | EI3    | 0.267| 0.259| 0.292| **0.735**| 0.258|
|                            | EI4    | 0.360| 0.257| 0.352| **0.786**| 0.353|
| Environmental Performance  | ESP1   | 0.216| 0.085| 0.242| 0.291| **0.867**|
|                            | ESP2   | 0.239| 0.155| 0.302| 0.355| **0.868**|
|                            | ESP3   | 0.269| 0.160| 0.346| 0.319| **0.869**|
|                            | ESP4   | 0.363| 0.148| 0.489| 0.364| **0.841**|
3.2. Structural model

The structural model quality determined by R² values of endogenous latent variables and standardized path coefficients [34]. The SmartPLS software is applied by the bootstrap method with 500 subsamples. The determination coefficient (R²) for environmental Innovation is 0.189, and for environmental sustainability performance is 0.244 (Table 1). From the analysis results of three components of market orientation towards environmental sustainability performance, we found that a negative and insignificant effect of customer orientation (b = -0.066, t = 1.514, ns), and insignificant effect of competitor orientation (b = 0.060, t = 0.834, ns). Environmental innovation (b = 0.275, t = 5.184, p < 0.001) have a positively and significantly influence environmental performance. It is supporting hypothesis H3 (Table 3).

Therefore, these studies add to the view about how the characteristics of small businesses in Indonesia. However, in the Indonesian context, customer and competitor orientation contribute to environmental sustainability performance, but only if mediated by environmental innovation, i.e., the organization's openness to new ideas [13] & [26] especially in minimizing its impact on environmental damage and focusing on developing that were stressing long-term sustainability [38]. Our results may be explained that in the case of Small Indonesian businesses, they have not been able to make customer and competitor orientation play a central role for organizations' success in building and developing successful business relationships [39] while maintaining environmental sustainability.

Different results indicate that the market orientation component that has a positive effect and significant on the environmental sustainability performance of the small businesses in Indonesia is interfunctional coordination. The evidence we provide shows that it is essential to building these capabilities. They need systematic internal interaction and a reactive character of environmental activities in running a company. When implementing environmental management, organizations recognize how the environment connects with their activities [40]. Environmental management by organizations must be applied continuously and has improvement plans from time to time based on Deming’s continuous improvement model [41].

| Path | Hypothesis | Path Coefficient | t - statistics | Inference |
|------|------------|------------------|---------------|-----------|
| CO → ESP | H1a | -0.066 | 1.514 | Not Supported |
| CM → ESP | H1b | 0.06 | 0.834 | Not Supported |
| IC → ESP | H1c | 0.303 | 3.75** | Supported |
| CO → IC | H2a | 0.135 | 2.549* | Supported |
| CM → IC | H2b | 0.177 | 2.772** | Supported |
| IC → EI | H2c | 0.211 | 4.006** | Supported |
| EI → ESP | H3 | 0.275 | 5.184** | Supported |

* p< 0.05, **p < 0.01

4. Conclusions

This study gives a better comprehension of Indonesian small businesses. The contribution of the components of the market orientation in small businesses in Indonesia in this study results in surprising results because some support and do not support it. The conclude that our study provides researchers with an understanding of market orientation's importance to enhance environmental innovation in determining the level of business performance to achieve environmental sustainability performance for small businesses.

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