Unveiling the Factors of Readiness for Change in the Digital Sharing Economy: An Exploratory Factor Analysis

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ABSTRACT

The significance of an instrument is in its capacity to precisely and reliably assess the desired construct. This study aims to examine and construct a tool for assessing the level of preparedness for change within small and medium-sized enterprises (SMEs) operating in the digital sharing economy, as well as providing readers with an idea of what procedures should be followed when applying Exploratory Factor Analysis (EFA), sharing practical information about the latest developments in decisions to use the EFA method. The data were examined and verified using exploratory factor analysis techniques. The present study consisted of 103 SME owners selected randomly and met the predetermined criteria. The findings of this study demonstrate the presence of 86 indicator items categorized into seven fundamental constructs. The items under these seven constructs accounted for 69.1% of the overall variation. The average reliability coefficient for all constructs is 0.97, indicating that the indicators used to measure readiness for change in the digital sharing economy are reliable instruments. In addition to facilitating knowledge acquisition, these discoveries offer a dependable information resource for academics and practitioners in the field who are interested in prospective investigations about shift preparedness within the digital sharing economy. The importance of an instrument lies in its ability to accurately and consistently measure the intended construct.

Contribution/Originality: The main contribution of this research is the development of an instrument to assess the preparedness of small and medium-sized enterprises (SMEs) during the transition phase towards the digital sharing economy. This novel instrument can potentially be employed in forthcoming studies pertaining to analogous subjects.
1. Introduction

The change management readiness assessment model serves as a structured model for measuring an organization’s preparedness level in adapting to the ever-evolving landscape of the digital sharing economy. The model proposed by Lestantri et al. (2023) offers a structured framework for effectively managing change within the digital sharing economy. To effectively assess preparedness in the face of digital transformation, it is crucial to have a thorough understanding of the key aspects that influence readiness. This highlights the need to understand the complex indicator elements that contribute to the formation of each construct. Nevertheless, it is crucial to recognize the tool’s constraints, which highlights the need to develop a customized instrument that aligns with the particular requirements of the study goals. Hence, the creation of a tailored instrument becomes an essential undertaking to guarantee accurate alignment with the distinct topic of the research.

The principal objective of developing a questionnaire is to produce a dependable and valid instrument for collecting data and insights from individuals or groups. In the present investigation, the scholars devised tailored tools to gather empirical evidence and assess certain constructs efficiently. The research's distinctiveness stems from its specific objective, wherein the questionnaire items were meticulously designed to measure the continuous evolution of change preparedness within the digital sharing economy setting. Due to the very specific character of the research aims, it is insufficient to rely only on pre-existing questionnaires through adaptation or adoption to accomplish the goals outlined. In instances of this nature, it is imperative to develop instruments from the ground up to effectively and accurately target the research’s specific focus areas and objectives. In the context of this study, indicator items are defined as explicit statements that are included in questionnaires or measurement devices. Conversely, indicator items pertain to the phenomena that are quantitatively assessed or observed within the scope of this study.

2. Literature Review

2.1. Digital sharing economy

The development of the digital sharing economy is intrinsically linked to the collective utilization and sharing of resources, which has been shaped by evolving societal circumstances and behaviors. The concept of the digital sharing economy was initiated by collaborative consumption, highlighting the interconnectedness of these concepts. The digital sharing economy comprises a range of practices, including collaborative consumption, the collaborative economy, and numerous peer-to-peer sharing activities. These activities included lending, bartering, renting, selling, and trading. The digital sharing economy fundamentally revolves around optimizing the utilization of resources, particularly underutilized ones, and encompasses the exchange of products and services. The digital sharing economy concept was first intimately associated with technology since it relied on the internet, platforms, and mobile networks to facilitate the connection between customers and providers. Pouri and Hilty (2018) claim that the digital sharing economy encompasses a framework in which digital platforms and technology enable the exchange of resources, goods, or services among individuals and organizations. Within the scope of this research, the digital sharing economy is regarded as a digital platform or technology that facilitates a peer-to-peer framework for sharing unused commodities or services, regardless of whether the purpose is commercial or non-commercial. Community-based online services make. The coordination process is possible, which
promotes active involvement in consumer recruitment and marketplaces. As a result, unused assets are reduced, and various significant benefits, including economic and social advantages, are promoted.

2.2. Change Readiness

According to Halpern et al. (2021), the degree to which an organization is prepared to embrace digital tools and new ways of working can significantly impact how it uses technology and responds to innovation. This demonstrates the correlation between an organization’s readiness for adopting digital platforms and its propensity to innovate, whether in user-centric service innovations, improvements to quality standards, new approaches to doing business, or something else entirely. Innovating is possible by adopting, adapting, or developing new ideas. Like large corporations, small-medium enterprises (SMEs) must be ready to embrace a digital sharing economy business model if they want to expand their operations. The readiness of SMEs is a key factor in the widespread implementation of the digital sharing economy business model, as stated by (Halpern et al., 2021). Transitioning from a conventional to a digital sharing economy model is an ongoing process that necessitates adjustments in many areas.

Converting from a conventional to a digital sharing economy model is a process that never ends and calls for adjustments in a wide range of areas. Therefore, efficient and effective planning is crucial. To successfully embrace a digital sharing economy, all necessary constructs must be considered during the transition period (Ibrahim et al., 2017). As a result, it is essential to adopt a methodical approach, plan seriously, and get input from everyone involved during the transition (Limani et al., 2019). SMEs need a solid grasp of change readiness management to be adequately prepared for the forthcoming changes. SMEs can progress toward the digital sharing economy business model by learning the factors that make companies more capable of absorbing complicated change (Ibrahim et al., 2017). To transition to the new digital sharing economy business model, SMEs need to learn what factors make companies more adaptable to complex change (Ibrahim et al., 2017). Assessing preparedness for change is vital to the change life cycle since it informs important decisions (Combe, 2014). Hence, it is imperative to ascertain indicator items that are pertinent for elucidating the construct.

3. Methodology

Factor analysis is a statistical technique that can be employed to ascertain the underlying theoretical constructs that are present within a specific dataset, as well as to evaluate the degree to which these constructs accurately represent the original variables (Surucu et al., 2022). Moreover, factor analysis is a statistical technique that can be employed to examine the associations among observed data and to represent these associations using one or more latent variables.

In this investigation, a thorough assortment of 86 pertinent indicators was employed to assess the concept of change preparation in the context of the digital sharing economy. The indicator items were meticulously formulated to correspond with the specific research criteria. The remarks were formulated in both English and Indonesian languages in order to foster inclusiveness. Nevertheless, there was a general agreement to adopt a single language for convenience. The indicator items have undergone a thorough investigation and verification process, which involved evaluating their substance and predictive validity by experts in the respective field. The researchers modified the
indicator items based on the feedback provided by the experts. The experts' suggestions and recommendations were integrated to enhance the overall quality of the measuring instrument. Furthermore, the study also included the participation of 13 respondents who were owners of SMEs in conducting face validation and assessing the degree of clarity of the instrument being developed (Yusoff, 2019).

The study was conducted with a sample size of 103 participants, all of whom were proprietors of SMEs. The term "small-scale SME firms" refers to SMEs within a specific employee count or turnover range. Specifically, these SMEs are characterized by having a workforce of 6 to 19 people or generating a turnover ranging from IDR 300,000,000 to IDR 2,500,000,000. In the context of SMEs, medium-scale SME firms can be defined as those with 20 to 49 employees or those that fall within the range of 20 to 49 employees or generate a turnover between IDR 2,500,000,000 and IDR 50,000,000,000 (Yazfinedi, 2018). The study's sample comprised 100 eligible respondents, who were chosen using a convenience sampling method. According to Mundfrom et al. (2005), it has been suggested that a sample size smaller than 100 can be adequate for conducting factor analysis, provided that the population size is sufficiently large and there are numerous items representing the factors. The study included SMEs that were active in the food and beverage industry sector, specifically focusing on those a specific focus on those situated in the Jabodetabek area. The questionnaires were distributed via internet channels at the outlet. Nevertheless, due to a less-than-ideal response rate, the researcher manually collected data by physically contacting SME representatives. The data acquired from these exchanges became the basis for further investigations. The researchers used SPSS 26 software to analyze exploratory factors to evaluate each measurement item's efficacy and ascertain the underlying construct.

4. Result

Researchers utilized the principal construct extraction analytic approach throughout the factor investigation stage. This methodology considers the comprehensive range of variability and production variables contributing to a constrained portion of the unique variability. The primary purpose of this statistic is to improve the clarity of data, reduce the risk of information loss, and enable the analysis of elements with low correlations. This phenomenon plays a role in forming a more coherent and unified structure. Researchers employ the Varimax rotation approach because it maximizes the variance of loadings in component matrices, improving coefficients' clarity. For this research, researchers followed the suggested steps of the EFA approach (Tabachnick & Fidell, 2019), paying attention to KMO-MSA and Bartlett's test.

Table 1 provides an overview of the Exploratory Factor Analysis (EFA) test performed separately for each construct. The assessment of a variable's feasibility can be conducted by the utilization of KMO and Bartlett's Test. This entails examining the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO MSA) value. A Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) greater than 0.50 indicates that the sample is sufficient for factor analysis. Based on the summary output provided in Table 1, it is evident that the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) surpasses the minimum criterion of 0.5 for each construct. The Kaiser-Meyer-Olkin (KMO) sample measurement is above the minimum threshold of 0.5, as reported in previous studies by Rahlin et al. (2022), Rahlin et al. (2021), and Ehido et al. (2020). This indicator pertains to the specific form of factorability that aligns with the underlying assumptions.
Consequently, the available data is deemed adequate for implementing data reduction techniques.

Table 1: KMO-MSA and Bartlett’s test

<table>
<thead>
<tr>
<th>Constructs</th>
<th>KMO - MSA</th>
<th>Bartlett’s test</th>
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</thead>
<tbody>
<tr>
<td>People readiness</td>
<td>.955</td>
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<tr>
<td>Processes readiness</td>
<td>.962</td>
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<tr>
<td>Technology readiness</td>
<td>.951</td>
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<td>Organizational readiness</td>
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<td>Products readiness</td>
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<td>0.000</td>
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<tr>
<td>Consumers readiness</td>
<td>.959</td>
<td>0.000</td>
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<tr>
<td>External environment readiness</td>
<td>.942</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Additionally, Bartlett’s Test’s significance level (Sig) for each construct is statistically significant (0.000), indicating a value lower than the conventional significance level of 0.05. Hence, the factor analysis test can be pursued in this study since it has satisfied the two primary prerequisites. The results of the KMO MSA test indicate that all constructions meet the necessary criteria since their values exceed 0.5. Similarly, as observed in Bartlett’s test. Hence, given the completion of these two preliminary tests, the subsequent step is conducting the factor analysis test.

4.1. Instrument item testing

The subsequent stage involves the examination and assessment of the Communalities’ worth. The Communalities number represents how an examined variable can account for the underlying causes. The indicator can explain the factor if the Extraction value equals or exceeds 0.50. In the case of indicator item A5.1, the indicator item demonstrates a significant contribution of 54.4% to the factor under consideration. Hence, it can be asserted that indicator A5.1 adequately elucidates the variability in the factor.

A comprehensive analysis was conducted on a total of 86 items. Within the construct of people readiness, the item indicator A5.1 has the lowest value, precisely measuring 0.544. Within the construct of processes readiness, indicator item B1.1 exhibits the lowest value, precisely 0.556. Within the construct of technology readiness, the indicators C3.4 exhibit an indicator item with the lowest value, precisely measuring 0.638. Within organizational systems readiness, the indicator item D2.3 is identified as having the lowest value, precisely measuring at 0.658. Within the context of the construct of products readiness, it is observed that the indicator item E2.5 exhibits the lowest value, precisely measuring 0.686. Within the construct of consumers readiness, the indicator item F2.2 exhibits the lowest value, at 0.680. Within the construct of external environment readiness, the indicator item G1.3 exhibits the lowest value, at 0.658. A singular item, precisely item A5.1, exists within the construct of people preparedness, which possesses a loading value lower than 0.55. This finding demonstrates that A5.1, as the lowest indicator item, makes a substantial contribution of 54.4% compared to the lowest indicator items in other constructs. Based on the aforementioned findings, it is evident that the Extraction value for the indicators surpasses the threshold of 0.50. Hence, it can be deduced that the aforementioned assertions about the item can clarify the variables (Azleen et al., 2018).

The subsequent stage entails the analysis of anti-image correlation. A minimal threshold of 0.5 is deemed acceptable for the anti-image correlation of each indicator item. The data analysis in Table 2 reveals that all indicators within each construct demonstrate values
surpassing the threshold of 0.5. Therefore, it is evident that each indicator item listed in Table 2 has effectively satisfied the prescribed criteria.

Table 2: Communalities and Anti-Image Correlation

<table>
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<tr>
<th>Constructs</th>
<th>Communalities</th>
<th>Anti Image Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Smallest</td>
<td>Largest</td>
</tr>
<tr>
<td>People readiness</td>
<td>(A5.1) 0.544</td>
<td>(A4.3) 0.714 (A5.4) 0.944</td>
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<tr>
<td>Processes readiness</td>
<td>(B1.1) 0.556</td>
<td>(B1.10) 0.750 (B1.7) 0.944</td>
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<tr>
<td>Technology readiness</td>
<td>(C3.4) 0.638</td>
<td>(C2.2) 0.792 (C2.2) 0.929</td>
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<td>Organizational readiness</td>
<td>(D2.3) 0.658</td>
<td>(D1.3) 0.730 (D4.2) 0.907</td>
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<td>Products readiness</td>
<td>(E2.5) 0.686</td>
<td>(E1.1) 0.764 (E1.1) 0.895</td>
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<td>Consumers readiness</td>
<td>(F2.2) 0.680</td>
<td>(F2.5) 0.771 (F1.3) 0.950</td>
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<td>External environment readiness</td>
<td>(G1.3) 0.658</td>
<td>(G2.1) 0.731 (G1.4) 0.926</td>
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</table>

The subsequent step involves the observation of the metric value of total variance. The Total Variance Explained measure is used to quantify the relevance of each variable being analyzed (Ehido et al., 2020). According to the findings shown in Table 3, it is evident that the construct of people readiness exhibits the lowest Total Variance Explained Extraction value, accounting for 64.046%. Conversely, the construct of consumers readiness demonstrates the highest Total Variance Explained Extraction value, totaling 72.856%. This finding indicates that the indicator items created for the people readiness construct accounted for 64.046% of its overall construction. A minimum threshold exists for the cumulative value of extraction sums of squared loadings. The criterion for extracting sums of squared loadings in total variance explained is set at a commendable level of 60%. The analysis of Table 3 reveals that every construct demonstrates a cumulative Extraction Sum of Squared Loadings value over 60%. The indications shown in Table 3 have effectively met the predetermined requirements.

Table 3: Total Variants

<table>
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<tr>
<th>Constructs</th>
<th>Total Varian Explained Extraction Sums of Squared Loadings (cumulative %)</th>
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<tr>
<td>People readiness</td>
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<td>69.299</td>
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<td>Products readiness</td>
<td>70.869</td>
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<tr>
<td>Consumers readiness</td>
<td>72.856</td>
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<tr>
<td>External environment readiness</td>
<td>68.520</td>
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</table>

4.2. Forming constructs

The subsequent step involves the observation of the values present in the component matrix. The summary component matrix is presented in Table 4.

Table 4: Summary Component Matrix

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<th>Indicator items</th>
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<th>4</th>
<th>5</th>
<th>6</th>
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E2.4         .828
E2.5         .791
E2.6         .831
E2.7         .857
F1.1         .861
F1.2         .847
F1.3         .856
F2.1         .858
F2.2         .825
F2.3         .852
F2.4         .854
F2.5         .878
F2.6         .851
G1.1         .737
G1.2         .843
G1.3         .811
G1.4         .816
G1.5         .850
G1.6         .852
G1.7         .834
G1.8         .841
G2.1         .855
G2.2         .836
G2.3         .816
G3.1         .850
G3.2         .812

The consideration of rotated component matrix correlation holds significant importance. The indication will be visually presented if it meets the predetermined requirements, specifically when the numerical value surpasses 0.5 (Rahlin et al., 2022; Fitriana et al., 2022; Rahlin et al., 2021; Muda et al., 2020). Table 4 displays the matrix representing the summary component. Based on the data presented in Table 4, it is apparent that all indicators exhibit values beyond 0.5, confirming the validity of all indicators enumerated in Table 4.

4.3. Reliability

This statistical technique assists in ensuring that the measurement instrument produces outcomes that are both consistent and dependable. A reliability test was undertaken to establish the validity of the data received from the questionnaire in terms of its durability and precision. The current study entailed administering a reliability test to assess the internal consistency of the measurement technique and a reliability test to determine the inner surface of the measurement technique utilized. To evaluate this, the Cronbach’s Alpha coefficient was calculated using the SPSS software. The Cronbach’s Alpha coefficient, ranging from 0 to 1, serves as a measure to evaluate the degree to which the items in a scale accurately measure a single underlying construct. Generally, a Cronbach’s Alpha coefficient greater than 0.70 indicates general, while a Cronbach's Alpha coefficient greater than 0.70 indicates greater than 0.70 is indicative of a suitable level of reliability. This implies that the questions utilized in the measurement consistently evaluate the intended construct.

The data reported in Table 5 underwent a reliability assessment, and the results of this evaluation are summarized in Table 5. Based on the data presented in Table 5, the
Cronbach’s Alpha value calculated for each construct exceeds the specified threshold of 0.70. This shows that the reliability of all indicators for each construct, as presented in Table 5, is considered adequate. These findings confirm the reliability and validity of the measurements taken for each construct.

<table>
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<tr>
<th>Constructs</th>
<th>Alpha Cronbach</th>
<th>Comparison Value</th>
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<tr>
<td>People readiness</td>
<td>0.971</td>
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<tr>
<td>Processes readiness</td>
<td>0.978</td>
<td>0.70</td>
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<tr>
<td>Technology readiness</td>
<td>0.973</td>
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<td>Organizational readiness</td>
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<td>Products readiness</td>
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<td>Consumers readiness</td>
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<tr>
<td>Ext environment readiness</td>
<td>0.971</td>
<td>0.70</td>
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</table>

5. Conclusion

This study aims to design a measurement instrument that assesses the preparedness for change within the context of the digital sharing economy. The instrument underwent testing on SMEs who are engaged in the food and beverage sector within the Indonesian context. The instrument that was designed comprises 86 complete indicator items organized into seven constructs: people readiness, processes readiness, technology readiness, organizational systems readiness, products readiness, consumers readiness, and external environment readiness. The data satisfies the criteria outlined in Bartlett’s test, indicating statistical significance. The Kaiser-Meyer-Olkin (KMO) score demonstrates a satisfactory level of adequacy, above the threshold of 0.6. Additionally, the factor loadings exhibit values that surpass 0.55. The indicator items developed meet the requirements for measuring the relevance of each variable analyzed, having a value above 60%. The reliability measurements conducted on the seven constructs yield strong Cronbach’s alpha values, indicating that the indicator items within each construct demonstrate a high-reliability level. Hence, the results suggest that the 86 indicator items are appropriate for utilization in this study. The validation process was employed to ascertain that the created instruments exhibited high consistency and stability when applied to different samples. The aforementioned findings are a reliable and authoritative source for scholars and practitioners who wish to conduct further research on change preparedness in the context of the digital sharing economy.

Ethics Approval and Consent to Participate

The researchers used the research ethics provided by the Research Ethics Committee of Universiti Teknologi MARA (REC-UITM). All procedures performed in this study involving human participants were conducted in accordance with the ethical standards of the institutional research committee. Informed consent was obtained from all participants according to the Declaration of Helsinki.

Acknowledgment

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Conflict of Interest

The authors have stated that they have no conflicts of interest related to this work and that there are no potential conflicts of interest regarding the research.

References


