

The Influences of Behavioral Factors Moderated by Information Technology and Competitive Advantages on Sustainability of MSME Craft Business in North Sulawesi

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Abstract: Micro, Small and Medium Enterprises (MSMEs) are business units managed by community groups, with a strategic role in national economic development because they absorb a large number of workers. This study uses a quantitative approach, while a sample of 80 craftsmen, in the form of natural stones, rattan, bamboo, shells, pottery, coconut shells and shells, and wooden handicrafts, are managed by MSMEs, and have superior products in North Sulawesi. Furthermore, the data analysis method involved in SmartPLS software, version 2.0.m3, is run on computer media. Competitive Advantage Construction, provided by R-Square 0.820 contribution and adjusted value 0.813, which means that 81.3% is 18.7% and other factors are not examined within the scope of this study. R-Square 0.972 and adjustment value 0.9710, which shows that 97.10% is influenced by it and the remaining 2.90% is influenced by other factors. Information Technology Design, contributed r-Square of 0.857, with an adjusted value of 0.851, which means that 85.10% is influenced by IT, while the remaining 4.90% is a result of other factors not examined.

Keywords: Business Sustainability; Entrepreneurial Orientation; Managerial Ability; Individual Character; Competitive Advantage; Information Technology.

1. Introduction

The increasing competition in the craft industry requires business actors to actively utilize competitive strategies that are relevant to their development, therefore maintaining a continuity advantage over similar companies. The challenges leads to the exposure of regional borders and so the economic viability depends on the widened global competition, where only big investors win through the improvement of non-static performance standards including quality, production costs, product introduction time and information delivery. Business continuity is however, only obtained by those who meet or exceed global standards, hence, the development of a dynamic business environment affects every company, including large, medium and small enterprises. Furthermore, the fiscal crisis of recovery has been operated for several years and numerous studies have indicated that the Indonesian economy does not only rely on the role of large businesses, conversely, the MSMEs have proven to possess relatively better resilience. The results of this study further prove that both during the crisis and recovery period of the current economic situation as MSMEs have a very strategic and important role in terms of various aspects, which include (a) The large number of industries, present in every sector. (b) The great potential in creating more employment opportunities, compared to the same investment in larger scale businesses. (c) Their contribution to the GDP is quite significant. (d) The impact on the country's foreign exchange, with a stable export value (Hadiyati, 2009). MSMEs possess a variety of external weaknesses, which include the reduced ability to adapt to environmental influenced and the lack of skills to achieve business opportunities. Furthermore, they are also affected by internal factors, which include shortage in creativity, innovation and poor anticipation of various other challenges, which could result from a prolonged economic recession. In addition, other core

elements that influence micro investments include a shortfall in managerial ability, the inhibition of individual character and insufficient access to information technology, due to the fact that some of the human resources have poor quality of anticipation towards problems. In order to win in the competition of marketing, manufacturers' base emphasis on its quality and also depends on the company's utility of behaviors, which include entrepreneurial orientation, managerial ability, individual characteristics. Furthermore, these characteristics are collectively used as a strategy in achieving competitive advantage and ability, facilitated by Information Technology. However, the main objective of possessing administrative ability is to meet market demands, to enhance the advantageous use of a product, over other company brands and the basic problem in this area, for small entrepreneurs, is the incapability of employers to determine a management pattern, appropriate to the needs at different stages of enterprise development. In each advancement phase, a company experiences requires a different level of administration in its inception. The production scale is relatively low, thus a simple family managerial technique is dominated. In line with the steady internal and external evolutions in the business environment the conventional management style was not applied due to the pressure and the emergence of new problems. Therefore, small enterprises are required to always be dynamic in executing plans according to business growth. Furthermore, demand for using conventional management is relevant only if the small-scale entrepreneurs (craftsmen) have inadequate abilities and managerial skills.

1.1. Research Objectives

In general, this study aimed to analyze and explain the following:

- a. The influenced of behaviors (entrepreneurial orientation, managerial ability and individual character), through competitive advantage, on the sustainability of MSME business.
- b. The consequence of these behaviors, through information technology, on the continuity of the enterprise
- c. The impact of the influence of these behaviors, through competitive advantage and information technology on the sustainability of MSME business

2. Related Works/Literature Review

Several studies have been carried out by experts on the factors that influence the success of MSMEs on several variables between other outcomes, performance, productivity, market development, competitive strategies and corporate entrepreneurship. There have not been or have not been found studies that look at certain variables as variables (X) for continuity (sustainability) (Y). This research will be conducted to fill gaps or include existing factors such as entrepreneurship, individual character, management ability, through information technology and competitive advantage to support the sustainability of craft MSMEs with research in the handicraft industry in North Sulawesi. The results of research showed that development of craft industries can improve people's welfare. The study refers to several previous studies as follows:

2.1. Relationship between entrepreneurship orientation and information technology

Abbas (2018) states that the current youth has surely got a business mind and possess huge motivation to start its own ventures and good prospect is that students are not earning degrees only as they consider entrepreneurial ventures an effective tool to increase their earnings. Their motivation is high, and they are also impressed by the recent IT giants thus considering information technology businesses as an economic booster that can edge declining economies. Similarly Tavakoli (2013) explains that information technology has created dramatic developments in all social activities including entrepreneurship and is regarded as the most important tool of modern entrepreneurship. Also entrepreneurship in IT has so vast activity. Entrepreneurship is requisite of technology development.

2.2. Relationship between entrepreneurship orientation and competitive advantage

Judgment based on superior knowledge in critical areas increases an entrepreneur's chance of success. Knowledge of the market, consumers and enterprise refined ability to judge marketing strategies in a world of uncertainty. Entrepreneur-specific knowledge tends to increase the vertical

integration when the firm cannot find in the market the necessary capability to accomplish its innovation strategies (Saes & Ishikawa, 2013). Likewise, Block *et al* (2014, verifies that the necessity based start-ups are more likely to pursue a cost leadership strategy and less likely to pursue a differentiation strategy. Even though the necessity motive is linked to a number of observable characteristics of the entrepreneurs and to various particularities of the start-up projects, it is found to have a considerable, direct effect on the choice of strategy.

2.3. Relationship between entrepreneurship orientation and sustainable community

According to Alani *et al* (2016), attitudinal, perceptual factors, firm size, sector, ownership, innovative orientation, personality, management skills, motivation, infrastructure, working capital management, and access to finance (amongst others) are critical to sustainable entrepreneurship among SMEs. The relativity of the observed critical factors to the ease of doing business in Nigeria by SMEs towards sustainable entrepreneurship was emphasized in the study. The study recommends the need for governmental agencies and educational establishments to provide adequate information and enlightenment to foster sustainable entrepreneurship among SMEs. This furthermore elaborated by Moore dan Manring (2009) by stating that several successful models of the sustainable SME are evolving, it may be that networks of SMEs will become essential for addressing the systemic problems that underlie industrial ecology, enterprise resilience, and global supply chain sustainability. SMEs represent the majority of all enterprises, and rapidly evolving communication technologies allow for various routes of network formation. As SMEs succeed in integrating social and environmental sustainability performance into financial projections and strategic business goals, they will expand opportunities for innovation by increasing their opportunities for rapid learning.

2.4. Relationship between managerial capabilities and information technology

Firms ought to pay attention to knowledge management in order to enhance dynamic capability to outcompete rivalry in a turbulent environment. Development of Internet and database technology facilitates more advanced IT application in modern business administration. New frontiers of business world are expanded and new business models are launched continuously to serve customers better. As trends of globalization, shorter life cycles, and stronger IT functions remain, firms are operating in an increasingly fierce competitive arena (Sher and Lee, 2001). Furthermore, Thomas *et al* (1997) explains why some firms struggle while others flourish with the same ITs, and why IT-based advantages tend to dissipate so rapidly; and they suggest a solution based on an integration of IT with the firm's infrastructure of human and business complementary resources. ITs carry enormous productivity power but, like other powerful weapons, misfire in the wrong hands. Supporting the seemingly universal intuition that tells managers that technology alone is not enough.

2.5. The Relationship Between Managerial Abilities and Competitive Advantages

Kaur and Mehta (2015) describes that there was no consensus among researchers on the true nature of relationship between dynamic capabilities and competitive advantage of firms. An in-depth examination of this relationship in the present study was an attempt to provide deeper understanding of the complex relationships between the two concepts. Also, there were very few studies which had been done on dynamic capabilities in the Indian context. The present study bridged this gap in the literature not only by empirically analyzing the dynamic capabilities of Indian multinationals but also by comparing the level of deployment of dynamic capabilities in Indian-origin MNCs vis-à-vis the foreign-origin MNCs operating in India. Furthermore, Bellner and Donald MacLean (2015) states that the strategic management process involves establishing the strategy/structure relation and determining the highest-level objectives of the firm. It involves an ongoing assessment of the internal and external environment, and the alignment of the firm's strategy with the activities that frame the organizational design, and processes and systems in delivering the mission. Yet, it requires more than effective and efficient strategic management practices if the firm is to survive and/or grow in regimes of rapid change. The strategy needed is a dynamic innovation strategy, defined here as the firm's theory about how to gain competitive advantage in periods of significant change.

2.6. Relationship between managerial capability and sustainable MSMEs

Small business support providers, policy makers and practitioner should identify, prioritize and customize the most influential managerial problems in designing entrepreneurial training and assistance programs (Pansiri and Temtime, 2008). This is supported by Gharakhani and Mousakhani (2012), by describing that managers need to actively manage their firm's human capital to stimulate its capability in managing knowledge acquisition, sharing, and application. Furthermore, research suggests appropriate investments initiation can enhance organizational performance.

2.7. Relationship between individual characters and information technology

According to Lounsbury *et al.* (2014), IT professionals had significantly higher levels of agreeableness and tough-mindedness, and lower conscientiousness, emotional stability, extraversion, assertiveness, customer service orientation, optimism, and work drive. Functional value and person-occupation fit of this distinctive trait profile for the work of IT professionals in an era of technological and organizational change. Implications are described for future research as well as the recruitment, selection, management and promotion of IT professionals, as well as their training, development, coaching, and mentoring. In addition, Opatha (2007) explains that Individual Character was defined as the aggregate of all of the relatively persistent moral qualities a person has that combines to form his/her real nature. It is the degree to which the person possesses the virtues and do not possess the vices. Virtues are to be nurtured within the individual while vices are to be removed from the individual for the purpose of developing IC. It was asserted that IC was not the so called personality and it differed significantly from personality in several ways. It was substantiated by literature that IC is of utmost importance for individual development, organizational development and nation development as well.

2.8. Relationship between individual characters with competitive advantage

Jassin (2014) explains that the quality of the organization's employees, their enthusiasm, and their satisfaction with their jobs and the company all have a significant impact on the organization's productivity, level of customer service, reputation and survival. In other words, in a competitive environment, people make the difference. Human resources are a critical component in every area of the organization, from finance to sales to customer service to line management. Managers and supervisors in every department confront human resource issues every day and are responsible not only for interactions within their own department, but also interactions between departments. The primary function of human resources today is to ensure the effective and efficient use of human talent to accomplish an organization's goals and objectives. Furthermore, Omerzel and Gulev (2011) state that Globalization, technical evolution, and deregulation are changing the competitive structure of markets in such a way that the effectiveness of traditional sources of firms' competitive advantage is often debilitated. Competitive advantages based on physical, financial, or even technological assets are less and less sustainable since these assets are more easily transmittable. This is the reason why firms need to concentrate on the development of difficult imitable capabilities. Such capabilities relate to employees of the firm. They develop and apply their abilities, knowledge and skills, organized and coordinated in ways, which can be also distinctive.

2.9. Relationship between individual characters and sustainable MSMEs

The development of a SME program to equip the management members is very important in an attempt to ensure the encouragement for SMEs to be successfully developed (Wiese, 2013). It is furthermore explained that a highly behaviorally integrated is more likely to engage in sustainability-oriented actions because behaviorally integrated offer its team members an increased chance of being innovative and generating new ideas as compared to less behaviorally integrated. It is also found that the generation of novel ideas is higher in teams with younger members, and that highly educated generate more innovative ideas in the workplace (Jahanshasi and Brem, 2017).

3. Material and Methodology

3.1. Data

Table 1 explains the data collection method used for this study with instruments used.

Table 1. Table of tools / types of data collection methods and instruments

No	Types	Instrument
1	Questionnaire	Checklist (list of matches), Scale, inventory
2	Interview	Checklist (list of matches)
3	Observation	Observation sheet, observation guide
4	Documentation	Checklist, table

Source: Authors

3.2. Method

This study involved a quantitative research (Johnson, 2005; and Kasiram 2008: 149-150), using deductive (rational-empirical or top-down) thinking patterns, in an attempt to understand a phenomenon, by applying general concepts. Furthermore, positivistic logic was used thereby avoiding subjective elements, followed with a planned procedure. This technique was utilized to arrange nomothetic science, which sought so create laws of generalizations on the topic, data collected, and information sources and also on tools used for collection. Data was however assembled, through measurement, using objective and standard tools, which were further subjected to calculation or quantification.

4. Results and Discussion

This study drew research finding as follows:

4.1. Results of composite reliability

The construct reliability test was measured by composite reliability criteria from the indicator block. Furthermore, the construction was declared reliable, if the value obtained was above 0.70 and the following output were recorded:

Table 2. Composite reliability

Description	Composite reliability
Individual character	0.932
Managerial ability	0.922
Competitive advantage	0.957
Entrepreneurial orientation	0.787
Sustainability of MSME business	0.969
Information Technology	0.953

Source: Survey, 2019

Table 2 showed the composite reliability output for individual character constructs (0.932), Managerial Ability (0.922), Competitive Advantages (0.957), Entrepreneurship Orientation (0.787), Sustainability of MSME Business (0.969) and Information Technology (0.953), were all above 0.70, hence, it could be concluded that the construct had good reliability.

4.2. Structural model test (inner model)

Table 3. R-Square

Description	r-Square	r-Square Adjusted
Competitive Advantage	0.820	0.813
Sustainability of MSME Business	0.973	0.971
Information technology	0.857	0.851

Source: Survey, 2019

Table 3 illustrated structural model testing, which was performed by observing the R-Square value, also known as the Goodness-fit model test. Furthermore, of the influence of behaviors (entrepreneurial orientation, managerial ability and individual characteristics) studied, on competitive advantage, to accomplish MSME business sustainability, provided an r-square value of 0.820 (82%), while 18% was due to other variables outside the scope of this study. However, the Influence of these behaviors, towards information technology, in order to sustain business, provided a value of 0.857. Therefore the business viability was affected by the behavior towards Competitive Advantage, with an effect of 85.70 %, while 14.30% was due to other variables.

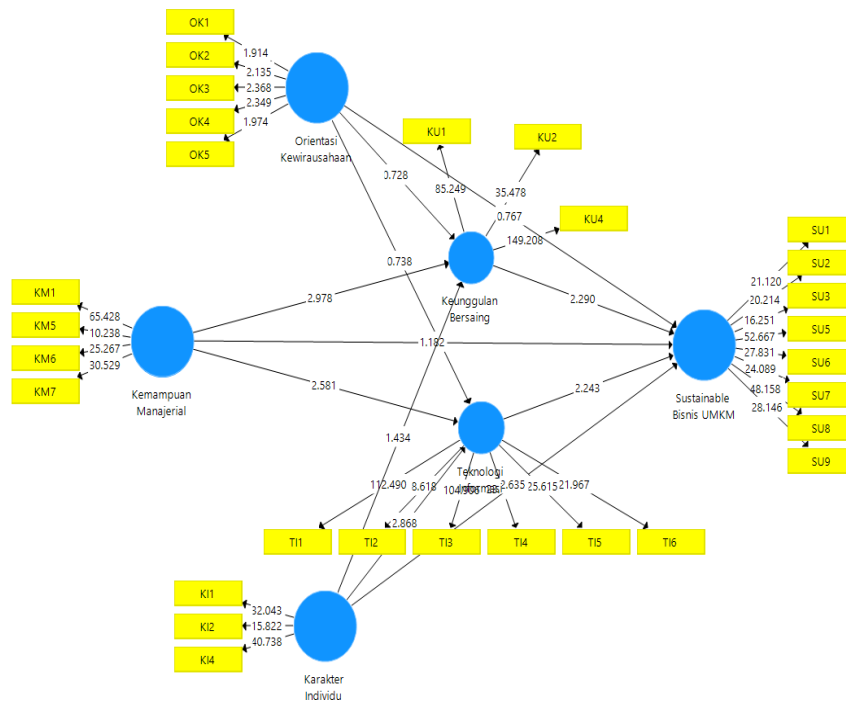


Figure 1. Full model after bootstrapping, data processing in SmartPLS, 2019

The full model of all calculation using SmartPLS application explained the details of the of the studied behaviors towards competitive advantage and information technology, to attain a sustainable enterprise, provided an R-Square value of 0.973(97.30%), while 2.70% was is explained by other variables, outside of those studied. Based on the full model bootstrapping model (Figure 1), the direct and indirect influenced could be calculated. The results are as follows:

Direct influence (entrepreneurial orientation to the sustainability of MSME business	= 0,767
Indirect influence (entrepreneurial orientation through competitive advantage to the sustainability of MSME business) = 0.728 x 2.290	= 1,667 +
Total Influence	= 2.434
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Direct influence (entrepreneurial orientation on the sustainability of MSME business	= 0,767
Indirect influence (entrepreneurial orientation through information technology on the sustainability of MSME business) = 0.738 x 2.243	= 1,655 +
Total Influence	= 2.422
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Direct influence (managerial ability on the sustainability of MSME business	= 1.182
Indirect influence (managerial ability through competitive advantage on the sustainability of MSME business) = 2.978 x 2.290	= 6.819 +
Total Influence	= 8.001
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Direct influence (managerial ability on the sustainability of MSME business	= 1.182
Indirect influence (managerial ability through information technology on the sustainability of MSME business) = 2.581 x 2.243	= 5.789 +

Total Influence	----- = 6.971
Direct influence (individual character on the sustainability of MSME business	= 2.635
Indirect influence (individual character through information technology on the sustainability of MSME business) = 1.434 x 2.243	= 3.216 +
Total influence	----- = 5.851
Direct influence (individual character on the sustainability of MSME business	= 2.635
Indirect influence (individual character through competitive advantage on the sustainability of MSME business)) = 1.434 x 2.290	= 3.283 +
Total influence	----- = 5.919

Source: Data processing, 2019

4.3. Influence of entrepreneurial orientation on information technology

This study indicated that the nature of entrepreneurial orientation significantly influenced the development of Information Technology, thus, a better executive coordination, leads to an enhanced knowledge and skill, in IT. Furthermore, entrepreneurial orientation was measured, using 5 indicators, which included experience, courage to take risks, proactivity, anticipation and flexibility Lumpkin and Dess, (1966); Sri Muljaningsi, (2011) and Weerawerdeena, (2003). Conversely, the Information Technology concept was analyzed, using several indicators, including, wholeness of software and hardware, Network Systems, etc. Utilization of internet in updating the public, through website, communication of models and design, application of IT in completing tasks on time, using Whatsapp application, Facebook, Instagram, etc. Asmani & Ma'mur, (2011) stated that information technology was not restricted to computer hardware and software processing and storage of information, however, it also included telecommunication, as it aids in sending and disseminating information. The Smart-PIs results illustrated that entrepreneurial orientation had a positive and significant influence on Information Technology (0.953), which meant that an enhanced knowledge of IT, leads to efficiency in its utility.

4.4. Influence of entrepreneurial orientatinal on sustainability of MSME business

The design of entrepreneurial orientation significantly influenced the sustainability of MSME business, thus, a better executive coordination positively affects the continuity of the enterprise. Furthermore, entrepreneurial orientation was measured using 5 indicators, as mentioned above while enterprise viability was measured with core indicators, e.g. (a) Ability to create profits, where (1) Income is the difference between revenue and expenses/losses within a period (2) Physical, size, energy, endurance and emotional intelligence are needed to obtain operating revenue. (3) The gains earned contribute to long-term economic performance. (b) The ability to protect the environment (planet), where (1) non-renewable resources (e.g. gold, aluminum, sulfur iron, stone, etc.) are restricted to the creation of handicraft raw materials (2) biodiversity, biological natural resources, which originates from living things, need to be conserved by MSMEs (3) businesses operated by MSMEs do not produce pollution. (c) They possess the ability to improve social life (community) with indicators, that include, (1) business enhances societal life of rural communities (2) They free participators from extreme poverty (3) They do not cause diseases that are harmful to health (4) Basic education and skills are the main requirements for craftsmen (5) Efforts needed are not gender specific (Savit & Weber, in Cambra-Fierro & Benitez, 2011). Smart-PIs calculations showed that entrepreneurial orientation had a positive and significant influence on the sustainability of MSME business (0.787), hence, an enhanced entrepreneurial orientation, would enhance business viability.

4.5. Influence of managerial ability on information technology

The development of managerial ability, significantly influenced the design of information technology, hence, an enhanced administrative capability, leads to a better understanding of IT. Furthermore, managerial abilities were measured using indicators, which include the ability to communicate, guide and motivate employees, as well as the capacity to delegate work, in a manner

that condones respect. Furthermore, prepare a workplan hence, every job is completed on time, take executive decisions and build a solid work team (Abdul Latif 2002), Mulyanto (2007) and Suci (2009), on the contrary information technology was assessed, using the several core indicators mentioned previously. The smart-pls calculation showed that the design of managerial ability significantly influenced the development of IT by 0.471 (47.1%.)

4.6. Influence of managerial ability on sustainability of MSME business

Developing managerial ability using indicators mentioned previously, significantly (positively) influenced the sustainability of MSME business, which was measured, using a number of core indicators, as mention previously (Savit & Weber in Cambra-Fierro & Benitez, 2011). Smart-Pls calculation, further showed that administrative ability had a positive and significant influence on the sustainability of MSME business (0.887), therefore, a manager that communicates, directs and motivates employees, as well as delegates work to enhance the feeling of mutual respect, creates work plans, makes decisions and build a solid work team, the business continuity would be assured.

4.7. Influence of individual character on information technology

The development of individual character significantly influenced the design of information technology, hence a better personal behavior, which fostered the utility of information technology. Furthermore, the administrator personality was measured, using indicators, which included interests, needs, attitudes and expertise (Stonner and Freeman Saryathi, 2003; Simamora; 2003), while information technology was assessed, using several core indicators previously mentioned. Smart-pls illustrates that individual character had a positive and significant influence on information technology (0.893), hence, personal attitudes and needs on a staff, carrying out a task, influenced their understanding of information technology.

4.8. Influence of individual character on sustainability of MSME business

Smart-Pls showed that construct of the individual character, had a positive and significant influence (0.893) on the design of MSME business sustainability, measured using indicators such as interests, needs, attitudes and expertise (Stonner and Freeman Saryathi, 2003; Simamora 2003). Furthermore, if a manager exhibited positive attitudes and needs on a person carrying out work, the sustainability of North Sulawesi craftsmen was enhanced.

4.9. Influence of competitive advantage on sustainability of MSME business

Smart-Pls showed that developing competitive advantage, significantly influenced the development of sustainability of MSME business (0.958), hence, an improved perception of competitive advantage, enhanced the viability of the enterprise, measured using indicators, which included rarely found, not easily replicated, not easily replaced as well as competitive prices, whose indicator was not used because it was applied on sustainability variables. Furthermore, the continuity of these enterprises was measured, using a number of core indicators as mentioned previously (Savit & Weber in Cambra-Fierro & Benitez, 2011). Furthermore, if products had a good competitive advantage, the sustainability of craftsmen enterprise in North Sulawesi was ensured.

4.10. Influence of information technology on sustainability of MSME business

Smart-pls showed that information technology development, significantly influenced the sustainability of MSME business (0.971), hence, a better understanding and use of IT, fosters the b viability in North Sulawesi Province, observed from the magnitude of the effect (0.971) measured, using several core indicators as mentioned above (Jamal Ma'mur Asmani, 2011). on the contrary business continuity, based on the opinion of Savit & Weber in Cambra-Fierro & Benitez, (2011), was measured, using a number of core indicators, including the ability to create profit, protect the environment (planet) and improve social life (community).

4.11. Theoretical Implication

This research the following results:

- a. Formulated a business sustainability model for MSMEs, by combining entrepreneurial orientation behavior, managerial abilities and individual characters, inherent in a craftsman, which were further moderated by the ability to manage competitive advantage strategies and use/understand information technology.
- b. Provided a linkage model between the behaviors studied, hence promoting their use in the theory of MSME advancement in developing country contexts, including Indonesia.
- c. Development of MSMEs, with entrepreneurial orientation behaviors, managerial abilities and individual characteristics, towards competitive advantage and information technology, which could further be developed in future education systems.
- d. Sought to minimize the lack of studies in the domain of MSME business continuity, from the perspective of developing countries.
- e. Applied data on the importance of entrepreneurial-oriented behavior, as well as executing managerial abilities, followed by good individual character, accompanied by the use/understanding of information technology and the implementation of competitive advantage strategies, further leading to the sustainability of MSME craft businesses that exposed regional identity.

4.12. Practical Implication

- a. This study had provided useful information, valuable insights and also brought to light, the behaviors (entrepreneurial orientation, managerial abilities, individual characters) necessary to develop businesses, as well as improvement on the understanding of IT and enhancement of the capability to run competitive strategies in managing MSMEs.
- b. This research produced benefits, based on the importance of increasing behavioral knowledge, which was an influential factor in entrepreneurial success and business continuity.
- c. These enterprises were often hereditary and related to regional identity therefore their sustainability needed to be improved because it had an impact on the regional economy.
- d. The influence of maintaining behavior in advancing an enterprise, increasing understanding of information technology and being able to run a competitive advantage strategy in management, was essential because business continues to run successfully.

5. Conclusion

The competitive advantage development provided an R-Square contribution of 0.820 (81.3%) and Adjusted value of 0.813, which meant the remaining 18.7% was as a result of other factors not examined. The development of sustainability of MSME business had a test value of 0.972 (97.10%) and an adjusted r-Square of 0.9710, indicating that the remaining 2.90% was due to other influenced. The Information Technology concept had an r-Square value of 0.857 (85.10%) and an adjusted value of 0.851, which indicated that the remaining 4.90% was as a result of other elements not examined in the scope of this study. Furthermore, reliability test was assessed, using composite reliability criteria, from the indicator block that measures the development. Furthermore, the results could be declared dependable, if their value was above 0.70. The following were outputs recorded: Individual Character (0.932), Managerial Ability (0.922), Competitive Advantage (0.957), Entrepreneurship Orientation (0.787), sustainability of MSME business (0.969), Information Technology (0.953), indicating that all parameters met the requirements of reliability.

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