Research Article

Engineering and Applied Science Research

Character and readiness to adopt digital marketing technology: A case study of small retailers in Yogyakarta Province, Indonesia

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Abstract

The primary goal of digital marketing consists of attracting buyers and letting them connect with the seller through digital media. Marketers use electronic media to promote items or services in the market through digital marketing. Prior study on digital marketing has mostly focused on technological advancements in its implementation in businesses. Meanwhile, how SMEs are prepared to utilize digital marketing technologies has remained unexplored. To fill this need, this study investigates the readiness of small retailers based on their character configuration. The technology readiness index 2.0 method was employed, and 204 small retailers were chosen as participants. According to the study's findings, more than half of small retailers are ready to adopt digital marketing technologies, with 43.63% at a medium-ready level and 9.80% at a highly-ready level. Nonetheless, a large proportion of small retailers require targeted interventions and approaches to increase their readiness level.

Keywords: Small retail, Character, Readiness, Digital marketing, Technology Readiness Index (TRI)

1. Introduction

Retailing is important in all economies since it integrates consumers' diverse wants with manufacturers' specialized products [1]. To engage their customers, retailers have adopted a range of technologies. Technology may help enterprises focus on appropriate buyers and assist buyers in generating informed views about the products and services they want to buy [2]. Nowadays, retail is changing at a rapid pace as a result of technological advancements and changing buyer habits [2]. Retailers are always looking for new and inventive methods to reach out to new consumers while enhancing how customers are treated [3]. As a result of constant technological advances and customers' expectations, the adoption of digital technologies in traditional enterprises is fast expanding [4].

Technologies encompass features designed to help customers to ways to pay including online shopping utilizing apps for mobile devices [5]. Beyond only selling, digital marketing has the potential to extend the size and drive business development [6]. The idea of digital marketing encompasses all actions, organizations, and processes that use digital technology to produce, convey, and provide value to clients such as *e*-commerce, mobile devices, smart products, the Internet of Things (IoT), and artificial intelligence [7]. However, some companies still maintain conventional marketing to advertise their products and service [8-10].

The current literature mostly examines the adoption of digital marketing in organizations, companies, or corporations, such as [11] [6, 10, 12], and some others focus on implementation in small enterprises. Several researchers have concentrated on examining the SMEs' readiness to embrace digital marketing, including [13] who centered upon key readiness indicators, [14] and [15] that emphasized the rationale and employee viewpoint, and, [16] and [17] which raised issues with developing a model. However, no previous research gives a clear description of the character factors and level of preparedness of SMEs, particularly small retailers. According to [18], nearly all SMEs have already implemented information technologies into their business operations such as communication tools (e-mail), but they are mostly used as routine duties with insufficient digital technology in the business. These gaps prompted authors to carry out this study, which aims to assess small retailers' character and readiness for adopting digital marketing technologies in their businesses.

The objectives of this study are to (1) define the character of small retailers in running their businesses, (2) assess their readiness level for adopting digital marketing technology, and (3) Map the readiness-character relationship to provide a greater understanding of the state of small retailers. This study contributes to providing a basis for further studies on the following five psychological characteristics of retailers: explorers, pioneers, skeptics, hesitators, and avoiders. Finally, the study gives a character map as well as its consequences. This is critical for digital marketing technology practitioners and developers in terms of successfully creating new technology products for SMEs, particularly small retailers.

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2. Literature review

2.1 Digital marketing technology

Digital marketing leverages the capabilities of internet access, search engine promotion, digital advertising, social media, and mobile devices, and is connected to a variety of opportunities [19, 20]. It supports marketing campaigns by addressing consumer needs and enhancing the awareness of consumers [21]. Consumers may keep up to speed on business information through digital marketing technology [22]. Digital marketing technology often comprises interactive and integrated marketing that allows connection between producers, market intermediaries, and potential customers, with the further advantage of being able to reach consumers regardless of geographical or time limitations.

The digital era's disruption in the retail sector has created new possibilities and capabilities for retailers [23]. Small and medium enterprises (SMEs) can foster innovation faster than larger enterprises since their approaches are more adaptable and decision-making time is shorter [24]. Numerous SMEs, particularly in developing countries, have adopted digital platforms over the past few decades to integrate technological advances into their old conventional services and operation [25].

Digital marketing technology has four advantages for SMEs, according to [26]. First, it assists SMEs to use novel technologies (e.g., artificial intelligence, big data, cloud computing) as well as build new relationships with their current partners (e.g., suppliers) as a way to achieve innovative business models [11, 27]. Second, it enables SMEs to develop firm-level services operation, skilled, and strategic competencies [27-29]. Third, digital platforms are capable of helping SMEs develop innovative business models by facilitating them to readily collaborate with prospective partners [11, 30]. Fourth, digital platforms have the potential to assist SMEs to transform their business processes by implementing novel business processes [31, 32].

2.2 Technology readiness index

Technologies readiness is defined as a combination of mental motivators and inhibitors that describe a person's propensity to accept new technologies [33]. Moreover, [34] defined readiness as having four mental dimensions: optimism, innovativeness, discomfort, and insecurity. Optimism is associated with a positive opinion of technology and the notion that it affords people more control, adaptability, and effectiveness in what they do [33]. It has been recognized as part of a series of ideas that primarily identify their standards about the future [35] and the cause of behavioral intention [36]. While innovativeness is associated with a desire to be technological pioneers and intellectual leaders [33]. It proved to have a strong beneficial influence on behavioral intention and perceived ease of use [37]. Accumulation of optimism and innovation dimensions will serve as an accelerator or motivator in technology adoption readiness. The stronger optimism and innovation dimensions, the higher level of technology adoption readiness.

Conversely, the accumulation of discomfort and insecurity dimensions is an inhibitor to implementing technology readiness. The higher the degree of discomfort and insecurity, the lower the level of technological adoption readiness. Insecurity is linked to skepticism of technology, which stems from doubts about its ability to function effectively and concerns about its potentially detrimental implications [33]. Insecurity is a distrust of technology that stems from doubts about its capacity to work effectively and anxiety about its possible negative consequences.

The technology readiness index (TRI) was established by [33] to discover and quantify a person's proclivity to embrace and use technology to achieve certain goals. He classified the level of preparedness as low, medium, or high.

1. Low Technology Readiness Index
   Readiness is considered low if the TRI score is equal to or less than 2.89 (TRI = <2.89);
2. Medium Technology Readiness Index
   Readiness is considered at the medium stage if the TRI score is between 2.90 to 3.51 (2.90 = <TRI = <3.51);
3. High Technology Readiness Index
   Readiness is said to be high when the TRI score is more than 3.51 (TRI> 3.51).

Furthermore, [33] and [38] found that a person's readiness to adopt new technology is influenced by five personality traits or characters configuration: explorer, pioneer, skeptic, hesitator, and avoider. Explorers are heavy users and curious about the world; pioneers are heavy users and impulsive, and success-oriented; the skeptic is a moderate and deliberate user under pressure, and self-aware; hesitators are lighter and less curious users; avoiders are lighter users and provide less motivation [38].

3. Methods

3.1 Sample and size

The study was carried out in Sleman, Indonesia. Sleman was selected due to its excellent economic growth and the greatest population proportion in the Special Region of Yogyakarta. This study focuses on retailers from micro and small medium enterprises (MSMEs), which are classified into four groups: grocery stalls, vegetable stalls, local minimarkets, and fruit stalls. The questionnaire was separated into two parts: the baseline survey and the follow-up survey. The baseline survey involved 30 retailers, while the follow-up survey extended to 174 retailers. So, from June to July 2020, we gathered 204 participants.

3.2 Questionnaire and statistical

Small retailer readiness was assessed considering the four dimensions proposed by [34]: optimism, innovativeness, discomfort, and insecurity, shown in Table 1. Each dimension comprises four questions, for a total of sixteen. Every item was scored on a Likert scale of 1 to 5, with 1 representing strongly disagree and 5 representing strongly agree.

Table 1 Questionnaire

Mental Dimension	Question
Optimism	1. New technology brings a better quality of business.
	2. Digital marketing gives businesses more freedom of movement.
	3. Digital marketing gives managers/owners more control over their business.
	4. Digital marketing makes me more productive in business.
Innovativeness	1. Other people come to me for advice on digital marketing.
	2. I acquire new technologies early when they appear.
	3. I get to know cutting-edge digital marketing without the help of others.
	4. I follow technological developments in my field or business.
Discomfort	1. I sometimes feel taken advantage of by those who know more than me.
	2. Digital marketing services are not helpful for my business.
	3. I feel that digital marketing is not made for small retail.
	4. There are no instructions written in easy-to-understand language.
Insecurity	1. People rely too much on digital marketing for their business.
	2. Most digital marketing annoys or is even dangerous to business sustainability.
	3. Digital marketing degrades the quality of social relationships with consumers.
	4. I'm not comfortable doing online business.

Additionally, before proceeding to the follow-up survey stage, the questionnaire's validity and reliability were verified. Validity and reliability tests were carried out using SPSS software tools. The questionnaire's validity is tested using the Pearson Product Moment Correlation method, which compares the findings of the Pearson-Correlation value for each item with the r-tables; if the computed R-value is larger than or equal to the r-table, the data is valid [39]. While the reliability test of the questionnaire is carried out using Cronbach Alpha data calculations, if the Cronbach Alpha data value is greater than the minimum Cronbach Alpha value (0.6), then the data is said to be reliable [40]. Finally, the collected valid and reliable data will be utilized as input for TRI 2.0, which was developed by [34].

4. Results

4.1 Participants

The small retailers in this research are divided into four retail groups: grocery stalls, local minimarkets, fruit stalls, and vegetable stalls, all of which are classified as micro businesses under the Law of the Republic of Indonesia No. 20 of 2008. As demonstrated in Table 2, grocery stalls dominated the participants, accounting for up to 65.20% of the small retail population.

Table 2 Small retail participant

Retail Group	Number	Percentage (%)
Grocery stall	133	65,20
Vegetable stall	29	14,22
Local minimarket	25	12,25
Fruit stall	17	8,33
Total	204	100

4.2 Profile

Table 3 shows the profile of a small retail business owner. Females account for around 65.2% of small retail owners, with the remainder being male. More than half of retail owners are relatively young, with 19.61% aged 17 to 30 and 37.25% aged 31 to 45. This means that small retail enterprises are becoming more appealing to the younger generation, who are more comfortable with the Internet and digital marketing. Furthermore, based on their educational backgrounds, most small retail owners are educated.

Table 3 Profile of retailer

Profile	Retail Group				Total
	Grocery stall (%)	Vegetable stall (%)	Local minimarket (%)	Fruit stall (%)	
Gender					
Male (n=71)	21.57	4.41	4.41	4.11	34.80
Female (n=133)	43.63	9.80	7.84	3.92	65.20
Age Range					
17 to 30 (n=40)	5.88	3.92	5.39	4.11	19.61
31 to 45 (n=76)	23.53	5.39	4.9	3.43	37.25
46 to 60 (n=64)	25.98	3.43	1.96	0	31.37
> 60 (n=24)	9.80	1.47	0	0.49	11.76
Education					
Uneducated (n=2)	0.98	0	0	0	0.98
The school (n=171)	55.88	12.74	7.35	7.84	83.81
Bachelor (n=30)	8.33	1.47	4.41	0.49	14.70
Postgraduate (n=1)	0	0	0.49	0	0.49

4.3 Data

Validity testing was carried out for each research variable: optimism, innovativeness, discomfort, and insecurity. As explained by [39], the questionnaire item was valid when the Pearson-Correlation (r-count) value is positive and greater than the r-table values. According to Table 4, the Pearson-Correlation value exceeds the R-table value, showing that all questionnaire items are valid. The following is the result of the reliability test. All questionnaire items have a Cronbach alpha value larger than the theoretical value (0.70 points), as shown in Table 5. This signifies that the data gathered from the questionnaire is reliable.

Table 4 Validity test

Questionnaire item	Pearson-Correlation	R-table	Result
Optimism 1	0.795	0.361	Valid
Optimism 2	0.693	0.361	Valid
Optimism 3	0.727	0.361	Valid
Optimism 4	0.847	0.361	Valid
Innovativeness 1	0.823	0.361	Valid
Innovativeness 2	0.708	0.361	Valid
Innovativeness 3	0.925	0.361	Valid
Innovativeness 4	0.876	0.361	Valid
Discomfort 1	0.727	0.361	Valid
Discomfort 2	0.828	0.361	Valid
Discomfort 3	0.762	0.361	Valid
Discomfort 4	0.720	0.361	Valid
Insecurity 1	0.757	0.361	Valid
Insecurity 2	0.842	0.361	Valid
Insecurity 3	0.835	0.361	Valid
Insecurity 4	0.679	0.361	Valid

Table 5 Reliability test

Item	Cronbach alpha	Theoretical value	Result
Optimism	0,756	0,70	Reliable
Innovativeness	0,851	0,70	Reliable
Discomfort	0,746	0,70	Reliable
Insecurity	0,780	0,70	Reliable

5. Discussion

5.1 Character of small retail

To provide an answer the study's first objective, which is to determine the traits of small retailers in adopting technology for digital marketing. This study maps the mental dimension of small retail carried out using the TRI 2.0 method approach.

Table 6 Character and mental dimension

Character	Mental dimension			
	Optimism	Innovativeness	Discomfort	Insecurity
Explorers	High	High	Low	Low
Pioneers	High	High	High	High
Skeptics	High	Low	Low	Low
Hesitators	High	Low	High	High
Avoiders	Low	Low	High	High

Except for the skeptic character, the characters of small retailers are generally identical to those defined by [33] and [38], as shown in Table 6. Skeptics have a high optimism score, although all characters should have a low optimism score [34]. This analysis concludes that the skeptic character represents strong uncertainty in this scenario. For instance, someone with a skeptical personality has a high degree of optimism, but there is no major effort since the amount of innovation is minimal. According to [41] skeptics are not anti-technology; they just lack passion and are less inclined to feel technology gives them more control over their life.

Furthermore, to look in more detail and comprehensively at the character of small retailers, this study maps the percentage of personal traits (Table 7). Small retailers are evenly dispersed throughout four characters: explorers (27.45%), pioneers (20.59%), hesitators (24.51%), and avoiders (19.61%). The skeptic character is rather tiny, accounting for 7.84% of the total.

Table 7 Retail character

Character	Retail Group				Total (%)
	Grocery stall (%)	Vegetable stall (%)	Local minimarket (%)	Fruit stall (%)	
Explorers (n=56)	15.20	3.43	5.39	3.43	27.45
Pioneers (n=42)	10.29	4.41	3.92	1.96	20.59
Skeptics (n=16)	5.88	1.47	0.00	0.49	07.84
Hesitators (n=50)	16.67	3.92	1.96	1.96	24.51
Avoiders (n=40)	17.16	0.98	0.98	0.49	19.61

The explorer was able to collect 27.45% of the samples. It is the most significant in this investigation. On other items, this finding is substantially greater than the research by [38] in Chile (proxy 5.07%), and even higher than the US investigations (proxy 18%) by [34]. Second, is the pioneer character. It has 20.59% of the samples, which is slightly more than the US figures, which are approximately 16%. Third, the skeptic character accounts for only 07.84% of the total. It is relatively low in comparison to the US, which has 38%. Four hesitators characterize approximately 24.51% of the small retail sample. It is similar to the [42], which is roughly 24.7%, but higher than the study in the US (around 13%).

Several associated differences in those outcomes are attributable to differences in culture, education, and infrastructure [38]. When investigating innovation adoption, different cultures might induce different patterns of behavior [43, 44]. Furthermore, [45] discovered a significant disparity in the rate of dissemination of new technology between the United States and developing nations.

5.2 Readiness of small retail

Readiness is a key aspect that influences the effective use of digital marketing technologies [46]. Technological readiness is a combination of desire and mental obstacles that determines a person's propensity to use new technologies. As recommended by [33], the level of readiness for digital marketing technology adoption by small retailers in this study is divided into three categories: low, medium, and high.

Table 8 Retail readiness

Readiness Level	Retail Group				Total
	Grocery stall (%)	Vegetable stall (%)	Local minimarket (%)	Fruit stall (%)	(%)
High (n=20)	4.90	0.49	2.45	1.96	9.80
Medium (n=89)	25.00	7.84	6.86	3.92	43.63
Low (n=95)	35.29	5.88	2.94	2.45	46.57

Table 8 shows the readiness level. More than half of small retailers are ready to utilize digital marketing technologies. The proportion of medium preparedness level is 43.63%, while the percentage of high level is 9.80%. In total, 53.43% of small retailers are prepared to adopt digital marketing technologies to enhance their business. This conclusion is consistent with prior studies by [47]. On the other hand, 46.57% of small retailers require more consideration and approaches to better their readiness to adopt digital marketing technologies.

To address the final purpose, our study generated the character-readiness link in Table 9. According to the findings of the study, explorers are the most willing to adopt digital marketing technologies. This is in line with the findings of [41], which show that explorers are highly motivated and confident in their abilities to employ new technology to achieve their goals. Explorer character contributed 35.71% to high-level readiness and 64.29% to medium-level readiness. This suggests that when retailers with Explorer characters are introduced to digital marketing technology, 35% are highly ready and 65% are ready to embrace it.

Table 9 Retail character-readiness relationship

Character	Readiness Level		
	High (%)	Medium (%)	Low (%)
Explorers (n=56)	35,71	64.29	0
Pioneers (n=42)	0	76.19	23.81
Skeptics (n=16)	0	68.75	31.25
Hesitators (n=50)	0	14.00	86.00
Avoiders (n=40)	0	7,50	92.50

Pioneers and Skeptics, in addition to explorers, have made significant contributions to the readiness of digital marketing. It was shown that retailers with skeptical and pioneer characters had a medium degree of readiness for applying digital marketing technologies (68.75% to 76.19%). According to [41], skeptics are not anti-technology; they are simply less enthusiastic and do not feel that technology will provide ease and benefits to their business. These doubters are more inclined to hold off on implementing the technology unless there is convincing evidence that it is helpful. At the same time, the Pioneers are optimistic and innovative in their business activities, but they are reluctant to accept new technologies.

This study discovered that the influence of hesitator and avoider characteristics on the adoption readiness of digital marketing technology is modest. Avoiders and hesitators provided just 7.7% to 14% of medium-level readiness and 86% to 92% of low-level readiness. This demonstrates that small retailers with avoider and hesitant characters continue to struggle with accepting and using digital marketing technologies in their business operations. When presented with digital marketing technology, 86-92% of small retailers are likely to reject it as well. According to [34], hesitators believe in technology but lack the resources to implement it and are less likely to be inventive. They will start implementing technology once their business conditions begin to falter and decrease. Avoiders, on the other hand, are the least likely to accept the technology. They are the opposite of explorers in that, in addition to being uninterested in new technology, they lack motivation and creativity in their businesses.

6. Theoretical and practical implication

6.1 Theoretical implication

This study presents a theoretical contribution by mapping the character and readiness of small retailers to utilize digital marketing technologies. Small retailers can be classified into 5 groups based on their character, including explorers, pioneers, skeptics, hesitators, and avoiders. Characters of small retailers are generally identical to those defined by [33] and [38], with varying degrees of optimism, innovativeness, discomfort, and insecurity. The explorer character indicates a high degree of optimism and innovativeness among explorers, which outperforms the findings of similar research done in Chile and the United States. Pioneers are characterized by high

degrees of optimism, innovativeness, discomfort, and insecurity, showing a readiness to accept new technology. Skeptics lack innovativeness implies a lack of effort in implementing digital marketing technologies. On the other hand, The hesitator character exhibits a combination of optimism, discomfort, and insecurity, indicating a cautious approach to embracing new technology. Avoiders have low degrees of innovativeness, discomfort, and insecurity.

6.2 Practical implication

Understanding the character and readiness of small retailers is critical for developing and executing successful strategies and support systems to promote the adoption and deployment of digital marketing technologies in the retail sector. This study offers useful insights into the relationship between character traits and a readiness to adopt new technology, as well as recommendations for personalized treatments for improving readiness among various character types. Small retailer personalities have an important effect on their readiness for the adoption of digital marketing technologies. Small retailers with explorers, pioneers, and skeptics personalities are more likely to use digital marketing technologies, whereas hesitators and avoiders may need particular attention and techniques to improve their readiness. This understanding may assist policymakers, academics, and practitioners to design effective digital transformation plans for the small retail industry. When developers or firms introduce and deploy digital marketing technology for small retailers who are reluctant to avoid it, they should give well-planned and careful guidance and facilitation.

7. Conclusion and limitation

7.1 Conclusion

Small retailers are virtually evenly divided into four types: explorers, pioneers, hesitators, and avoiders, with percentages of 27.45%, 20.59%, 24.51%, and 19.61%. In terms of readiness for adopting digital marketing technologies, around 53.43% of small retailers are ready to do so to assist their businesses. Explorers, pioneers, and skeptics are the characters who have made a significant contribution to medium- to high-level readiness. They are highly motivated and confident in their abilities to implement new technologies to attain their goals. Nevertheless, hesitator and avoider characters require attention and methods to boost their readiness. Hesitators believe in technology but cannot use it and are less inventive. Finally, avoiders are then the least likely to accept the technology. As a result, whenever digital marketing technology is offered to the hesitator and avoider characters at this point, they are likely to decline it.

7.2 Limitation

There is no ivory that is not cracked. This study has some limitations that should be addressed in future research. First, while the poll featured a bigger sample size of 204 participants, it was still confined to a narrow window (June-July 2020) and may have missed long-term trends or changes. Second, the measure used to assess readiness was developed from a prior study, which may impose cultural and contextual restrictions. Third, the study concentrated on small retailers in certain categories: grocery stalls, vegetable stalls, local minimarkets, and fruit stalls, which may not be representative of the whole retail variety. Finally, the character and readiness levels of small retailers were assessed by specific frameworks and grouping structures, such as the TRI 2.0 method and prior studies. These theoretical frameworks may not reflect the entire complexity and diversity of behaviors and mindsets among small retailers. It is critical to keep these limitations contemplated when evaluating the findings of this study or doing future relevant research.

8. Acknowledgement

9. References

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