

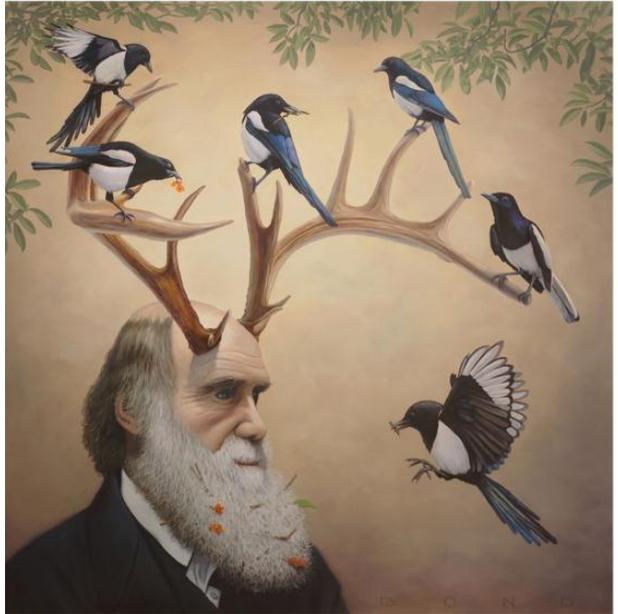
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Universidad del Zulia
Facultad Experimental de Ciencias
Departamento de Ciencias Humanas
Maracaibo - Venezuela

Digital entrepreneurship literacy model for rural youth entrepreneurs

Zaleha Mohamad^{1,3}, Muhammad Afiq Ahmad Khairuddin², Mohd Nizam Lani^{3,4}, Wahidah Hashim⁵

¹School of Maritime Business & Management, University Malaysia Terengganu 21030 Kuala Nerus, Terengganu Darul Iman

²School of Informatic Maritime and Applied Mathematics, University Malaysia Terengganu, 21030, Terengganu Darul Iman, Malaysia.

³ Centre of Knowledge Transfer and Industrial Linkage, University Malaysia Terengganu, 21030, Terengganu Darul Iman, Malaysia.

⁴School of Food Science & Technology, University Malaysia Terengganu, 21030, Terengganu Darul Iman, Malaysia.

⁵Institute of Informatics & Computing in Energy, University Tenaga National Selangor, Malaysia

zaleha.m@umt.edu.my, afiqahmad@umt.edu.my,
nizam.lani@umt.edu.my, hashim@umt.edu.my

Abstract

This research models the relationship between passion, attitude, Internet usage and age in nurturing digital literacy and narrowing the knowledge gaps between urban and rural settings via statistical analysis as a method. As a result, more people in Malaysia are passionate about digital entrepreneurship, have a good attitude to becoming digital entrepreneurs and tend to use the Internet as their source medium. In conclusion, successful entrepreneurs need to be young, passionate, have a good attitude and be willing to spend hours studying the Internet.

Keywords: Digital, Entrepreneurship, Literacy, Model, Youth.

Modelo de alfabetización en emprendimiento digital para jóvenes emprendedores rurales

Resumen

Esta investigación modela la relación entre pasión, actitud, uso de Internet y la edad para fomentar la alfabetización digital y reducir

las brechas de conocimiento entre los entornos urbanos y rurales a través del análisis estadístico como método. Como resultado, más personas en Malasia sienten pasión por el emprendimiento digital, tienen una buena actitud para convertirse en emprendedores digitales y tienden a usar Internet como su medio de origen. En conclusión, los empresarios exitosos deben ser jóvenes, apasionados, tener una buena actitud y estar dispuestos a pasar horas estudiando Internet.

Palabras clave: Digital, Emprendimiento, Alfabetización, Modelo, Juventud.

1. INTRODUCTION

Digitalization continues to drive globalization at unprecedented speeds (LEINER, CERF, CLARK, KAHN, KLEINROCK, LYNCH & WOLFF, 2009). The history of the industrial revolution 4.0 began at the Hanover Fair in 2011 with Germany policies to support high-tech industries. The cyber-physical hybrid and digitalization of lifestyle called the Internet of Things (IoT) paved the way for the factory of the future concept as the heart of the 4th industrial revolution. The IoT concept is accelerating the digital era by emphasizing holistic Internet application from households to industries, thus starting an industrial revolution to meet the demands (OKANO, 2017). In the industrial revolution 4.0, gadgets, machinery, modules for productions and products using cyber-physical hybrid systems are driving digitally intelligent factories to the extent that the real world and digital world gap is slowly becoming indistinguishable (OKANO, 2017). This has created enormous market opportunities and the emergence of companies in almost every field that adopt this new model of business (XU, DAVID, & KIM, 2018).

Advancements in information and communication technology (ICT) are driving the service especially banking (FAIZ & AHMAD, 2015). As industries and companies become more digitalized, it is threatening the labour workforce whereby only 20% of the workforce align with the digital age while the rest will feel its negative impacts (WALWEI, 2016). The logic of this unexpected event is that humanity has flaws that machines or devices can easily overcome. This phenomenon is unavoidable, but the population has to adapt to this new horizon, whether they are the consumer or producer.

Nevertheless, keeping up with the pace is essential for the entrepreneurs and being digitally literate is the key to success. According to a 2016 World Bank Group report, to foster a holistic digital economy, there needs to be innovation, growth, competitiveness, soft infrastructure, business surrounding, and the innovation environment. This issue has become more prominent when it comes to economic activities in a country. For example, the Silicon Valley is contributing 10.3% of GDP compared to San Francisco at 4.9% despite comprising only 7.7% of the population in the state of California in 2016 (MASSARO, LEVY, JENNINGS & JENNINGS, 2016). Of these, only 56.9% adopted the Internet into their daily life, and most Internet users in rural areas only used their smartphone to access the Internet at 40.1% in 2017.

This data indicates that technological literacy affects the economic status of a state. As such, this research constructs a digital literacy model for youth entrepreneurs in rural areas by finding the

relationship between their attributes as an entrepreneur and their level of digital literacy towards nurturing a new generation that can cope with the 4th digital revolution.

2. LITERATURE REVIEW

Digital literacy refers to the simultaneous action of enhancing, obtaining, and knowing the prospects and limits of technology. The level of digital literacy differs for every individual depending on the complexity of the task given. Digital literacy can be broken down into three categories that are primarily locating and using the content, to create new digital content, and communicate between digital contents. The level of fluency in digital literacy describes how well consumers locate and distinguish data within digital environments. Fluency in computerized literacy consists of basic utilization of application in the digital medium, knowledge of the principal part of digital media and intellectual skills to apply the digital medium in business areas.

Digital literacy is considered an important enabler of social mobility. It is a way for those who have had bad experiences to conduct re-learning processes as a tool that may erode the feelings of isolation and used to combat poverty. Digital literacy also refers to the capability to use facts and through an electronic medium (BOWLES, 2015). The digital divide is the gap regarding accessing and utilizing ICT and is sometimes used as an indicator of socioeconomic status. Low-literacy groups tend to have lower-incomes, lower education, are

rural residents aged from mid-50 and above, and not a native speaker of English (BOWLES, 2015).

In Malaysia, generation Y dominates the country's population and constitutes the primary workforce for generating household income. This has led researchers to explore the characteristics of this generation concerning their computer literacy, attitude towards Internet and prospects in digital commerce. Passion was identified as one of the most important affective aspects of experience that integrates the value of experience in every entrepreneur. Due to its intensive, positive and attractive behaviour, passion is regarded as an essential factor to overcome challenges. KURATKO (2003) explained that passion is crucial for producing non-conventional and novel ideas.

According to a consumer perspective, the Internet has a significant impact on e-commerce activities. It acts as a platform that opens up the global market rather than traditional marketing techniques that are more localized and narrow. The usage of digital mediums such as software or applications brings positive personal perception and confidence. It has been embraced wholeheartedly by the younger who are, for the most part, digitally literate.

3. CONCEPTUAL FRAMEWORK

This research comprises four independent variables and one dependent variable. The independent variables consist of passion or

interests, the utilization of the Internet as mentioned, attitude or confidence. The level of digital literacy is affected by various parameters, and the relationship is somehow linear, but there are cases of nonlinear relationships. Digitally literacy is the rate of fluency by using a digital device fluently in different environments and mediums, such as computers to mobile phones to tablets. The shifts from traditional ways of obtaining information to digital content through designated technology mediums is a necessity for digital literacy (OSTERMAN, 2012).

The definition of digital literacy was further elaborated through organized and composed information in nonlinear ways while the information is manifested through visual media integration. Modelling digital literacy would support using information and communication technology in entrepreneurial activities and policies that encourage the development of the younger generation. As determination is an absolute variable to evaluate digital fluency, the prominent issues determining a person has the qualities of being an entrepreneur is a good way to begin.

Considered as a subset of entrepreneurial branches, digital entrepreneurs must share the same qualities as traditional entrepreneurs, but their methodology is significantly different. They can operate from any part of the world, with customers on the other side of the globe, and a shorter period than traditional models. These characteristics portray a better model of business, where the costs can be reduced significantly, and the turnover rate can be exponentially

higher than conventional methods. It could save rural youth from poverty as is the case in Bratislava that signified the powerful influence as the Internet closes the gap in the digital divide.

Internet helps determine digital literacy, which is influenced by the various interpretation of technology and the media around society. Success stories and an increasingly user-friendly environment enhance user confidence to continue using the medium by inducing innovation in their business to close the digital divide. Thus synchronizing the independent factors and the dependent factors can be a definitive indicator towards nurturing young entrepreneurs, especially from rural areas. Figure 1 describes the conceptual framework of the study.

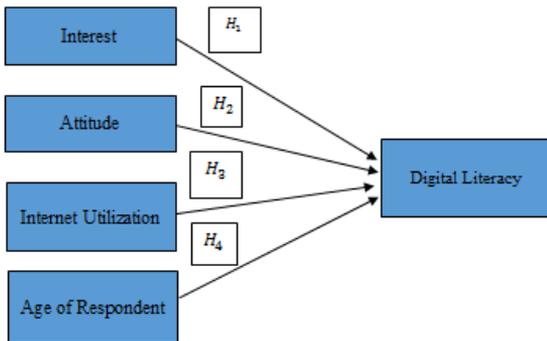


Figure 1: Framework concept of Digital Entrepreneurship Literacy Model among Rural Youth

The conceptual framework poses four different hypotheses, representing each independent factor towards the dependent factor, that is described in the statements below:

H₁: - There is a significant effect of the interest factor towards digital literacy.

H₂: - There is a significant effect of the attitude factor towards digital literacy.

H₃: - There is a significant effect of the Internet utilization factor towards digital literacy.

H₄: - There is a significant effect of the age factor towards digital literacy.

The hypotheses are to prove whether the factors increased or decreased digital literacy. In the case of significant value, mathematical models are used to analyse the relationship of each variable to digital literacy.

This research applies the quantitative method by using a digital entrepreneurship questionnaire. The content of the questionnaire is the respondents' collective information about their perspective and implementation of e-commerce and the current state of their business in 15 different sections. The questionnaire is quantified based on the factors and further aggregated by mean scores of each factor, except age which is already in clustered into five subgroups described in the table below.

Table 1: The age of respondents clusters and data

Cluster of Respondents Age	Frequency	Percent
Less than 20 years	6	4.2
21 - 25 years	38	26.6
26 - 30 years	36	25.2
31 - 35 years	46	32.2
36 - 40 years	15	10.5
More than 40 years	2	1.4
Total	143	100.0

For the sake of simplicity, the data must consist of ordinal data as ranked data is less restricted than nominal data. The factor of passion and attitude are evaluated by a set of Likert based questions that have five points from strong disagreement to strong agreement. For Internet usage, multiple-choice questions are used where the frequency is divided into four items, 0 – 2 times per day, 3 – 5 times per day, 6 – 10 times per day and more than 10 times per day. The structure of the items for each factor is described in Tables 2 and 3:

Table 2: Inferential analysis of the items in Interest factor and Passion factor

Factors	Item	Mean	Standard Deviation
Interest	I am interested to participate in digital entrepreneurship.	4.112	0.897
	I am interested in opening an online store.	4.210	1.027
	I am interested in equipping myself with the knowledge of digital entrepreneurship.	4.126	0.948
	I am interested in selling my product online.	4.112	0.979
	I am interested in increasing my	4.133	0.951

	sales online.		
Passion	I am passionate to increase my income.	4.427	0.755
	I am ready to join training or courses about online marketing.	4.322	0.893
	I am a competitive person.	4.294	0.854
	I believe digital entrepreneurship have many benefits.	4.315	0.834
	I am very active in contributing to the public.	4.119	0.968

Table 3: Descriptive analysis of items in Internet Usage factor

Internet Usage of the Respondents	Frequency	Percent
0-2/times/a day	10	8.4
3-5 //times/a day	19	13.3
6-10 /times/a day	23	16.1
More than 10 times/a day	89	62.2
Total	143	100

4. DATA ANALYSIS METHOD

As the questionnaire consists of many types of data, suitable yet comprehensible software is used for data analytics method. The Statistical Package for the Social Sciences (SPSS) Version 24 is used to meet the criteria as a medium of the data analysis. The SPSS tests include descriptive analysis, Pearson correlation tests and regression analysis. Any research that is constructed using a qualitative and quantitative method can be analysed by descriptive analysis as the basis of more complex statistical analysis such as linear regression

analysis, partial least square analysis and many more. The descriptive analysis consists of frequency and cumulative frequency distribution, and graphical presentation and statistical measures such as mean, mode, median and standard deviation.

The correlation tests such as the Pearson correlation coefficient is the value of correspondence between two variables most commonly used for the relationship between the dependent variables and independent variables. In this research, digital literacy is the dependent variable and while passion, attitude, Internet dependence and age are independent variables. The tabulated data below shows the correlation coefficient and the significant values of each independent variable against the dependent variable.

Table 4: Pearson Correlation Coefficient for the independent variables and the significant values for each of the factors (95% confidence)

Correlation Values	Passion Towards Digital Entrepreneurship	Attitude Towards Digital Entrepreneurship	Internet Dependence	Age of Respondent
Pearson Correlation	0.527	0.434	0.337	-0.190
Significant Values	0.000	0.000	0.000	0.012

From Table 1, we can conclude that the Pearson correlation coefficient is significant at 95% intervals on all independent factors, thus implying the correlation is true and unbiased. Comparing all the

independent factors, passion has the highest coefficient value indicating that corresponds most to the digital literacy among youth entrepreneurs by the value 0.527, followed by the attitude towards digital entrepreneurship with 0.434, Internet dependence with 0.337 and age with -0.190. The first three independent variables have positive relationships while age has a negative relationship.

Analysis of variance (ANOVA) is another statistical analysis to determine the significant difference of means between the independent variables. ANOVA is also used for the non-parametric sample. By setting the confidence interval at 95%, we can determine whether the independent variables are significantly different from each other by inspecting the significant value of the F-test for the variance. Table 5 is the summary of ANOVA for the independent variables, providing insights if variables have the same means or are significantly different.

Table 5: The summary of the ANOVA analysis of the model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	50.857	4	12.714	19.028	.000
Residual	91.540	137	0.668		
Total	142.397	141			

The significant values of the variables are lower than the 95% confidence interval thus accepting the initial hypothesis that the means of the variable differ significantly from each other and are independent of each other. In other words, the variables are not directly related. To

(Constant)	0.57 6	0.48 8		1.17 9	0.24 0	- 0.39 0	1.54 1
Passion Towards Digital Entrepreneurs hip	0.36 4	0.11 0	0.315	3.30 5	0.00 1	0.14 6	0.58 2
Attitude Towards Digital Entrepreneurs hip	0.27 7	0.13 5	0.186	2.05 4	0.04 2	0.01 0	0.54 4
Internet Dependence (Frequency of Usage)	0.23 6	0.07 5	0.234	3.16 9	0.00 2	0.08 9	0.38 4
Age of Respondent	- 0.04 7	0.02 0	-0.165	- 2.37 1	0.01 9	- 0.08 7	- 0.00 8

The table is the summary of the multiple linear regression of digital literacy with passion, attitude, Internet usage and age. All the factors are significant which is less than the alpha values. Thus all the factors are significant to the dependent value, i.e. digital literacy. If all the values are zero, digital literacy is 57.6% for every respondent. For the other independent factors, the values that will be discussed is when the coefficient is standardized. The passion factor plays a major role as it contributes 31.5% to digital literacy, followed by Internet usage 23.4% and 18.6% for attitude. However, age has a negative impact on digital literacy by decreasing it by 16.5% for every age group. This can be modelled by the following equation:

$$y = 0.576 + 0.315x_1 + 0.186x_2 + 0.234x_3 - 0.165x_4 + \varepsilon$$

From the equation above, we observe that more people in Malaysia are passionate about digital entrepreneurship, have a good attitude to becoming digital entrepreneurs and tend to use the Internet as their source medium. Digital literacy in Malaysia has the potential to reach 73.5% which is 27.6% more than the current digital literacy. On the other hand, as a person ages, it becomes harder to become digitally literate. As age increases by five consecutive years, there will be 16.5% decrement of digital awareness.

5. CONCLUSION

The digital entrepreneurship literacy model presented a consistent between age, interest, Internet usage and passion towards digital literacy. All the factors contributed positively to the model, except for age which had a negative relationship. Hence, successful entrepreneurs need to be young, passionate, have a good attitude and be willing to spend hours studying the Internet. The most important factor is passionate to learn new things from the Internet because most of the time the entrepreneur will move independently and needs constant drive from within to keep working for achieving profits.

The diversity of platforms such as apps, websites, blogs and podcasts can overwhelm new users and demotivate them to utilize the medium further. As a digital entrepreneur, they must have the will to

overcome the complexity of mediums and exploit all business opportunities and mediums. International business opportunities in Malaysia such as the new regional office of the Alibaba Group indicates that the entrepreneurs should take advantage of this international movement to commit to increasing the digital economy for Malaysia. This finding also benefits the government sector as the general mediator towards enhancing digital literacy that has a direct impact on the financial growth of the country through digital entrepreneurship.

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