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Analysis of the Moderating Effect of Media Literacy on Cervical Cancer Preventive Behaviours

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ABSTRACT

Media literacy can be defined as the ability to access, assay, create, and interpret media messages which are therefore able to impact the beliefs and practices of their audience towards specific topics. In the field of health communications, the effects of media literacy can often be seen as the predisposing factor for health information acceptance towards preventive behaviours. Meanwhile, there are several moderating factors which could act as changing agents for media literacy so that it becomes the reinforcing factor and increases the resultant outcome of preventive behaviours. The initial focus of this study was to analyse the moderating factor of media literacy in regards to the cervical cancer preventive behaviour model by using PLS-SEM with smartPLS 3.0 statistical software. The analysis was conducted among 506 respondents with a formative research design. The findings indicated that the indirect effect of media literacy towards preventive behaviours, (p-value 0.038) with the level of education as a moderating factor (R2 0.14), significantly influenced the interactions occurring in the whole construct of the model. The result of the study is that level of education is revealed to have a significant effect as a moderating factor towards the acceptance of health information and media literacy in general, which in turn enhances the preventive behaviours on cervical cancer issues. These findings confirm that higher education is associated with ancillary benefits, one of which is the understanding of health issues and the resulting improved preventive behaviour outcomes.

Keywords: PLS-SEM, moderating factor, health information, media literacy, preventive behaviour.

INTRODUCTION

While Asia's economy and technological growth have vastly improved, there has nevertheless still been an increasing rate of significant health problems. Cancer has been the leading cause of death for most people of reproductive age, (GLOBOCAN, 2018), while cervical cancer is the third most common cancer that caused death among women worldwide and the second most common cause of death in Asia (Bray et al., 2018). Cervical cancer is thus seen to be a significant contributing factor towards degrading women's quality of life, and in causing their premature deaths. Therefore, it is imperative and essential to enhance and promote preventive behaviors for reducing cervical cancer. This issue was in fact discussed explicitly in the global cancer conference at the Asian Oncology Summit 2013, in which the researchers revealed that promoting healthy lifestyles functioned as the primary preventative behavior to reduce the incidents of cervical cancer in Asia, while encouraging an early detection program took a secondary role in regards to prevention (Arb-aroon Lertkhachonsuk, 2014).

In order to encourage preventive behaviors, medical personnel must communicate effectively to the general public. However, the new age societies nowadays have developed their modern style of information reception to be primarily directed towards the media.

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The increased use of media has also influenced the overall amount of information received. Despite the flood of information, its purpose has not yet been met, due to a failure to address the level of acceptance for published information, specifically on health-related issues. Some of the beneficial health information which has been disseminated thru media such as television, newspaper, and the internet has only reached the targeted audiences less than half as much as intended, as mentioned in the Radu et al. (2016) study. Thus, while the media platform itself can promote behaviors and have a substantial impact on decision making, there are still critical gaps in information transferal, often due to a lack of media literacy. It is therefore of utmost importance that methods to enhance the transfer of health information are discovered.

Media literacy towards health information has, therefore, become one of the predisposing factors for preventative behaviors. Information from the media could contribute significant media literacy and heath literacy among people through the content portrayed (Emma et al., 2015). If it were synergised with some of the other missing indirect factors, it could influence the connection between media literacy and the ability to enhance preventative behaviors. These indirect factors are primarily known as the moderating factors, which act as the enabling agent towards the behavior, as an outcome of the whole understanding of health information. There are several moderating factors such as social economic status (SES), age, and marital status. In this study, however, the researcher only focused on the level of education moderating factor, because it is a crucial variable with the potential to amplify the other two constructs in the model in order to reach the desired outcome. Level of education is also vital in that it is one of the few factors, which may be impacted by outside influences, and thus either increased or decreased by societal intervention.

Therefore, in this study, the researcher proposed the whole interaction of the model as it exists between media literacy, health information, and level of education as moderating factors to enhance the preventive behaviors for cervical cancer. To analyse data in this study the researcher applied PLS-SEM, using the smartPLS 3.0 (Ringle, Wender & Becker, 2015), in which the moderating factor was included as one of the critical factors contributing to the effects of the model. The data was gathered from questionnaires within a random selection of 510 female respondents who live respectively in both urban and suburban areas of Java Island. Java Island was chosen as the location of focus for this study due to its nature as a 'melting pot' with persons from many ethnic, cultural, and geographical backgrounds all conveniently mixed together. After the data collection process, which occurred during September 2017 - December 2017, 503 data sets were stored and analysed accordingly.

This study has been structured into different discussion sections; section 1 is the introduction of the proposed idea, in which the need and plans for the study are discussed. Section 2 is the theoretical background which was used to build the different hypotheses of the study and show the intent and beliefs underlying the study. Section 3 is the methodology of the study, and details exactly how the study was conducted. Section 4 is the analysis of the variables measurement, and analysis of the construct, which in turn are followed by the presentation of the main result of these analyses. Finally, section 5 covers the conclusion, limitation, and research suggestions of the study. This last section shows what information may be usefully applied from the study and how future research may build upon these results.

THEORY AND HYPOTHESES

a. Health Information

Health information is an ethereal issue within the public health area, given that the variable power of knowledge to support decision making, in regards to health issues, is defined by the deepness of one's intelligence system. Thus, to support the cognitive system's decision making on health-related issues, health information comprehension functions as an integral part of a person's internal capacity for rational thought. Without decent amounts of health information, people are not able to make logical choices about potential health impacts from their day-to-day life. Instead, their actions will be based on ancillary knowledge as well as their own opinions, which may at times lead to counter-productive outcomes. Wibowo (2018) demonstrated in his research how information, thru the means of language, can have a significant impact on the actions of those who come into contact with it. Additionally, a person with limited health information may find that the little health information they have come from a dubious source or that they have misapplied that information.

In the overview of health system functions, health information is one of the six core functions of the health system, as mentioned in the USAID's (2015) study, where it was found that the understanding of specific health situations is attached to the process of seeking information, which in turn becomes part of the means for strengthening the health system. The decisive actions in regards to the health system are formed from a confluence of three primary factors. The first primary factor is based on the individual clearly understanding their current health situation. This means that the person must be aware of more than merely how much vitality they feel like they have. Instead, they must have information, which they have obtained from medical professionals regarding their health and body. Fauziah and Bahiyah (2018) stated that this information is retained best when it comes from a medical professional who demonstrates a genuine concern for their patients. Such information will allow an individual to be aware of the details of their health situation, which may otherwise remain hidden until too late. This, in turn, means that regular contact with health professionals is a critical component in people having the ability to harness the first primary factor.

Secondly, they must be aware of potential adverse developments for their health. This means that the individual must be aware of the possible maladies or conditions, which are likely to affect someone with their particular health situation. Having this knowledge will allow them to be forewarned of particular symptoms they must remain wary of, and to appreciate the importance of making positive changes. Again, this information is most likely to be gained from contact with health professionals or from reviewing the information provided by health professionals. Lastly, they must be informed regarding preventative measures. This last factor means that they are informed in the ways to adjust their environment, lifestyle, diet and medications in order to give themselves the greatest possibility of avoiding an adverse health outcome. As the saying goes, 'an ounce of prevention is worth a pound of cure'. As before, information from scientific health sources is an essential element here. Many people have their health information comprised of advice from friends and traditional beliefs, which may or may not actually be effective health solutions. Therefore, throughout these three positive health system elements, health information lies at the centre of all of them and can be seen to be vital in promoting healthy outcomes.

Nowadays, health information about the issue of cervical cancer is spreading out across various media, and has become one of the leading public health issues. There are many sources, which have mentioned various information about how global immunisations function as one of the secondary preventive behaviors, and those screening methods directly impact the cure probability. As mentioned in some studies cervical cancer prevention programs should include health education as an integral part of the plan, in which it is necessary to address and incorporate the health information on cervical cancer issues as part of the overall strategy. Health information, when it is present could effectively improve and reinforce the satisfactory outcomes of the preventive behaviors program. Therefore, the study has a proposed hypothesis as follows: H_1: Health information positively influences cervical cancer preventive behaviors.

b. Media Literacy

The use of media is increasing enormously in modern society due to the evolution and creation of new media forms. By definition of NAMLE (2013), media literacy is a series of communication competencies, including the ability to access, analyse, evaluate, and communicate information in a variety of forms, including print and non-print messages. It empowers people to be both critical thinkers and creative producers of an increasingly wide range of messages using image, language, and sound. It is the skilful application of literacy skills to media and technology messages, which means that being literate with media of a particular topic of content is part of building one's cognitive background towards that subject. It also means that persons would develop information literacy within the critical media foci which they used regularly.

Meanwhile, Gen Y nowadays has different abilities for interpreting the messages from the media (Ali, Fleming, Salman & Lyndon, 2017). Therefore, in accordance with that study, the literation of media towards health information issues has become one of the major influencing factors in reinforcing positive health behaviors, and in avoiding the confusion of interpreting issues. When applied toward media literacy it enables people to improve the life skill of learning how to differentiate types of information, as well as the ability to get a clearer perspective of what sources provide trustworthy information (Potter, 2013). After all, it is not enough to merely amass information as if the quantity of data was useful. Instead, the quality of the information is of vital importance. An excess of useless or false information will provide no benefit. It is crucial that persons can instead acquire information which is useful, and verifiable. Thus, the skilful use of media can benefit patients in regards to obtaining information, developing progress, and making decisions. In regards to the issue of cervical cancer, literation of media helps the society to develop and promote health behaviors by engaging the VIA (Visual Inspection with Acetic Acid) status as the secondary preventive behavior.

The effect of media usage can be tracked down by the following hypotheses of the study, H2: media literacy positively influences cervical cancer preventive behaviors. Evaluating the media literacy of persons could be prohibitively difficult and would inherently require a certain degree of subjective reasoning. However, to impact the critical point of media literacy, there is one indirect factor which establishes and reinforces the level of media literacy profundity, namely as the moderator element. This moderating factor can be objectively measured and is the vital key to moderating media literacy factors towards the enhancement of preventive behaviors.

c. Moderating Factor

Moderating analysis occurs when there is a tertiary factor, which can intervene in the whole interaction between the other two elements. The third factor has a significant influence within the model and creates a change in the simple exogenous construct as a result, which could be included in the path model as more than one mediator element influencing both the endogenous and exogenous factors. Hair Jr, Hult, Ringle and Sarstedt (2016) stated that the moderating factor interaction in the model, when the tertiary factor is present, would cause the transformation of the strength and the directions of the path model. The moderating analysis itself can thus contain a multitude of elements or even only a simple factor to allow the substantial mechanism of the underlying factors in the model.

In this study, the level of education is the moderating factor of the health information, and media literacy elements toward the cervical cancer preventive behaviors construct. This moderating factor is believed to impact media literacy significantly, and therefore, in turn, the useful application of health information. This means that a direct relationship should be observed between the level of education and media literacy. Persons with higher levels of education should display greater proficiency in media literacy and vice versa. Establishing this relationship allows for much more precise analysis and for more reliable solutions to be evaluated. After all, the level of education is an integer that may be objectively measured, and it is also a factor that can be utilised by interested parties. A conceptual model, which displays the interactions resulting from the level of education being used as a moderating factor is shown below:

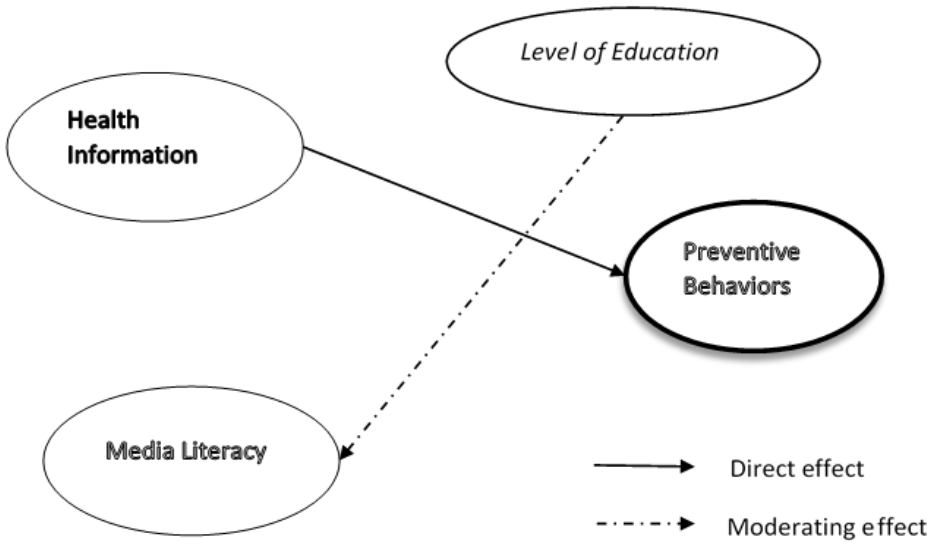

Figure 1: The proposed research framework.

Based on Figure 1, there are two elements i.e. health information and media literacy that are proposed to boost cervical cancer preventive behaviors. While those elements are basically profound variables of the model, it is necessary to address the individual level of education as the moderating factor to enhance the effect of the subjected preventive behaviors. To focus on clear health behaviors and goals, level of education is the

fundamental element of health knowledge comprehension (CDC, 2018). It is said that with the existence of a decent level of education, each individual is able to perform and contribute significantly through the learning process, and towards his/her self-efficacy in shaping norms for the health behaviors needed. Without education, the two principal elements have limited effectiveness. Increasing the amount of health information is not useful if persons do not have the educational background to understand the information or to apply it. Likewise, increasing people's media literacy is not useful if people do not have the educational background to appreciate the need for the information or to seek it out. Therefore, in this study, the level of education is the vital key as a moderating factor throughout the model of the study.

METHODOLOGY

a. Data

The data for this research was collected from the initial questionnaires, in which 510 respondents were gathered using a Lemeshow et al. (1990) sample size with a p-value ≤.05 and a confidence interval of 95%. After running the pilot project, some of the incomplete questionnaires were removed, and the final sample size became 503 respondents. Since the SEM-PLS process only requires 90-100 respondents, this study has thus far exceeded the safe limit necessary to reduce bias of the data analysis and perform as a source of valid results. The respondent's characteristics, as presented in Table 1, are mostly young adults age 25-30 years old, with higher education, who have already got their VIA status every six months. Statistically significant portions of the respondents are also of age 31-35 years, without higher education, who check their VIA status less frequently than every six months.

Table 1: The study respondent's characteristics.

Variables	Category	N	%
Age	25-30 Years Old	318	62.8
	31-35 Years Old	188	37.2
Level of Education	Non-Higher Education	65	12.8
	Higher Education	441	87.2
VIA status	> Every 6 Months	162	32.0
	Every 6 Months	344	68.0

b. Variables

This research has three variables, which are measured in the proposed model, which was to obtain health information by gathering data using the questionnaires adapted from Sorensen et al. (2012); these items are focused on how to access the health information. The first variable is media literacy, which covers the ability to obtain, identify, and decide which information is related to the health issue concerned. This questionnaire is adapted from Worsnop (1996). The independent variable is preventive behavior, which is measured by the nominal scale of questions for VIA (Visual Inspection with Acetic Acid) or PAP (Papanicolaou) screening. There is one variable that surpasses the model interaction by its influence, and this is the moderating variable of education level, which is based on Hair Jr et al. (2016). This factor acts as the third factor, and as an indirect effect contributing to the whole construct.

The moderating factor proposed in this research is the level of education, which contributes as more of an enhancing effect for the media literacy factor as it relates to the preventive behavior variable. Level of education plays a more significant role in comparison

to other related moderating factors such as age, marital status, and SES factors. The study done by UNESCO (2012) found that there are levels for the International Standard Classification of Education (ISCED) based on the duration of the studies. The ISCED 8 classification is the highest and refers to when more than six years or more of tertiary studies are done, while ISCED 1 is the lowest and refers to a minimum of 3 years of formal education. Since the body of knowledge of this proposed research focused on the critical cognitive link between health information and media literacy acceptance as shown by preventive behaviors, then it follows that level of education is a more reasonable variable to use in investigating the constructs. The level of education variable in this study was measured by two nominal scale categories (non-higher education, and higher education), in which higher education was defined as education occurring at least on an ISCED 6 level. ISCED 6 corresponds to, and describes, individuals who are at least pursuing their bachelor's degree in the tertiary level of education.

ANALYSIS

(i) The Measurements Assessment

Roldán and Sanchez-Franco (2012) mentioned that several measurements needed to be done before running the analysis. Also, the variables themselves need to be checked for fitness using the outer loading values, reliability and validity test of the constructs. These checks will ensure that the variables have a legitimate effect on the construct and that any observed results are not coincidental. The first test is to run the outer loading variables, and its purpose is to seek the variable which has a value >.70 (Hair Jr et al., 2016). As presented in Table 2, most variables are demonstrating a significant fit with a variance of values from 0.709 to 1.00. However, the health information access 6 variable with a 0.581 value is retained in the model, for its ability to reflect on the whole constructs (Hair Jr et al., 2016). When taken in concert with the values for the health information access 4 and health information access 7 variables, the general relation between the variables can be seen.

Table 2: Outer Loading Variables.

	Health Information	**Level of Education**	**Media Literacy**	**Moderating Effect 1**	**Preventive Behaviour**
Health information Access4	0.803				
Health information Access6	0.581				
Health information Access7	0.930				
Level Of Education		1.000			
Media Literacy * Level of Education				0.848	
Media_Literacy1			0.731		
Media_Literacy3			0.876		
Media_Literacy4			0.709		
PAP_Screening1					1.000

** statistically significant at >.70 (Hair Jr et al., 2016).*

The construct reliability and validity test were also calculated, to seek the Cronbach's alpha, rho_A, composite reliability average, and variance extracted (AVE) value of the indicators. For its calculation, we show that the value is significantly reliable and valid with

>.70 (Hair Jr et al., 2016). As presented in Table 3, the reliability and validity test of each variable shows that health information, level of education, and preventive behaviors have >.70 values on Cronbach's alpha, rho_A, composite reliability average, and variance extracted (AVE); this means that the variables are significant. Therefore, we see that these variables are linked and that level of education acts upon the other variables. Meanwhile, here the media literacy variable is 0.693 on the Cronbach's alpha value. This test shows that media literacy itself is a moderation indicator while it is on its own. Therefore, we need to propose the moderating factor in which acts on the media literacy factor.

Table 3: Construct Reliability and Validity.

	Cronbach's Alpha	**rho_A**	**Composite Reliability**	**Average Variance Extracted (AVE)**
Health information	0.710	0.913	0.823	0.616
Level of Education	1.000	1.000	1.000	1.000
Media Literacy	0.693	0.770	0.818	0.601
Moderating Effect 1	1.000	1.000	1.000	1.000
Preventive Behaviour	1.000	1.000	1.000	1.000

** statistically significant at >.70 (Hair Jr et al., 2016).*

(ii) Discriminant Validity

Assessment of discriminant validity is used to calculate the extent to which a construct is indeed distinct and different as compared to other constructs by an empirical standard (Hair Jr et al., 2016). The discriminant validity test itself has several tests to run which are presented in Tables 4, 5, and 6. The Fornell Larcker criteria are used to measure the shared variance in between the latent variables, which says it is significant if the degree is higher than the value of the construct (Fornell & Larcker, 1981). As presented in Table 4, the degree of health information, media literacy, and level of education as latent variables in the construct show that the value of each construct is greater than the corresponding, which means the discriminant validity of this construct has been established. This shows therefore that preventive behaviors are caused by the moderating effect 1, which in turn is increased by media literacy. Media literacy then responds directly to the corresponding level of education.

Table 4: Fornell Larcker Value.

	Health information	**Level of Education**	**Media Literacy**	**Moderating Effect 1**	**Preventive Behaviour**
Health information	0.785				
Level of Education	-0.193	**1.000**			
Media Literacy	0.081	0.014	**0.775**		
Moderating Effect 1	-0.032	0.037	-0.149	**1.000**	
Preventive Behaviour	0.504	-0.192	0.283	0.061	**1.000**

significant Fornell Larcker value presented in bold.

The cross-loading variables calculation is the first approach of the discriminant validity test; it is significant if the corresponding value is lower than the construct indicator (Hair Jr et al., 2016). As presented in Table 5, it shows that corresponding cross-loading values are lower than the value of the construct (presented in bold), which means that by this calculation the discriminant validity of the constructs has been established. This means that each of the constructs acts independently of the others and is not reliant on them.

Table 5: Cross Loading of Variables.

	Health information	**Level of Education**	**Media Literacy**	**Moderating Effect 1**	**Preventive Behaviour**
Health information Access 4	**0.803**	-0.074	0.054	0.030	0.346
Health information Access 6	**0.581**	-0.235	-0.107	0.048	0.155
Health information Access 7	**0.930**	-0.201	0.120	-0.081	0.540
Level of Education	-0.193	**1.000**	0.014	0.037	-0.192
Media Literacy * Level of Education	-0.032	0.037	-0.149	**1.000**	0.061
Media_Literacy1	0.081	0.092	**0.731**	-0.156	0.193
Media_Literacy3	0.084	-0.062	**0.876**	-0.101	0.287
Media_Literacy4	-0.025	0.060	**0.709**	-0.093	0.115
PAP_Screening1	0.504	-0.192	0.283	0.061	**1.000**

***construct cross loading value presented in bold.*

Table 6: Heteroit-Monotrait Ratio (HTMT) Inference.

	Health information	**Level of Education**	**Media Literacy**	**Moderating Effect 1**	**Preventive Behaviour**
Health information					
Level of Education	0.254				
Media Literacy	0.207	0.109			
Moderating Effect 1	0.079	0.037	0.178		
Preventive Behaviour	0.517	0.192	0.302	0.061	

**statistic significant is <.90*

The calculation of discriminant validity is finally done with the HTMT calculation that comes from 5000 sub-samples bootstrapping. HTMT correlation is the mean of all measurement between the constructs; the heteroit-monotrait ratio is to see if the correlation between different variables remains reliable. By this HTMT test, it shows that if the value is <.90 it indicates that the discriminant validity is met (Henseler, Ringle & Sarstedt, 2015). All of the HTMT calculations on this construct shows that all values are <.90, which means that all of the discriminant validity measurements met the threshold and the construct is valid.

(iii) Moderating Variable

Level of education is seen as a moderating variable in the model due to its contributions towards the indirect effects as calculated within the model (Hair Jr et al., 2016). The analysis of media literacy has affected the model with its specific indirect effect value as presented in Table 7. The indirect-only media literacy type of moderation shows that it is a significant indirect effect with a p-value of 0.038 or <.05. This indicates that the level of education is a moderating factor since it is 0.038 indirectly affected by the critical media literacy level towards cervical cancer preventive behaviors. This shows that the other factors have their levels directly related to the value of the level of education factor.

Table 7: Indirect Effect Media Literacy to Preventive Behavior with Level of Education Moderator.

	Specific Indirect Effect
Media Literacy	0.038

***statistic significant is <.05*

(iv) Structural Model

The structural model analysis is used to verify that the health information, and media literacy with moderating factor, has a significant effect on the cervical cancer preventive behavior as the proposed model in section 2. To conclude the model, it needs to calculate the R^2, with the health information R^2 values of 0.007 and the preventive behavior R^2 value of 0.337 indicating that the variables are valid, which is shown in Table 8 below:

Table 8: R^2

	R Square	**R Square Adjusted**
Health Information	0.007	0.005
Preventive Behaviour	0.337	0.332

As presented in Table 9, the path coefficient of the model shows that the T values of each variable are >1.96 (presented in bold), and the p values are ≤.05 (presented in italics), which means that the variables are valid and significant. With a p-value of 0.000, health information is 15.3 times more significantly effective to enhance the preventive behavior, and with a p-value of 0.000, media literacy is 7.08 times more significantly effective in working as the reinforcing agent toward cervical cancer preventive behavior. Also, in all of those measurements the level of education (p-value 0.003), as a moderating factor, has 3.02 times the influence of the other variables (media literacy, health information) in producing a significant effect towards the preventive behavior. This means that while media literacy is very useful in encouraging the preventive behavior, and health information access is even more useful; both of those factors pale in comparison to the effectiveness of level of education in corresponding to preventive behaviors.

Table 9: Path Coefficient.

	Original Sample (O)	**Sample Mean (M)**	**Standard Deviation (STDEV)**	**T Statistics (O/STDEV)**	**P Values**
Health information-> Preventive Behavior	0.465	0.464	0.030	**15.313**	*0.000*
Level of Education-> Preventive Behavior	-0.111	-0.111	0.038	**2.887**	*0.004*

Media Literacy-> Health Information	0.081	0.088	0.038	**2.109**	*0.035*
Media Literacy-> Preventive Behavior	0.264	0.266	0.038	**7.014**	*0.000*
Moderating Effect 1-> Preventive Behavior	0.140	0.139	0.046	**3.020**	*0.003*

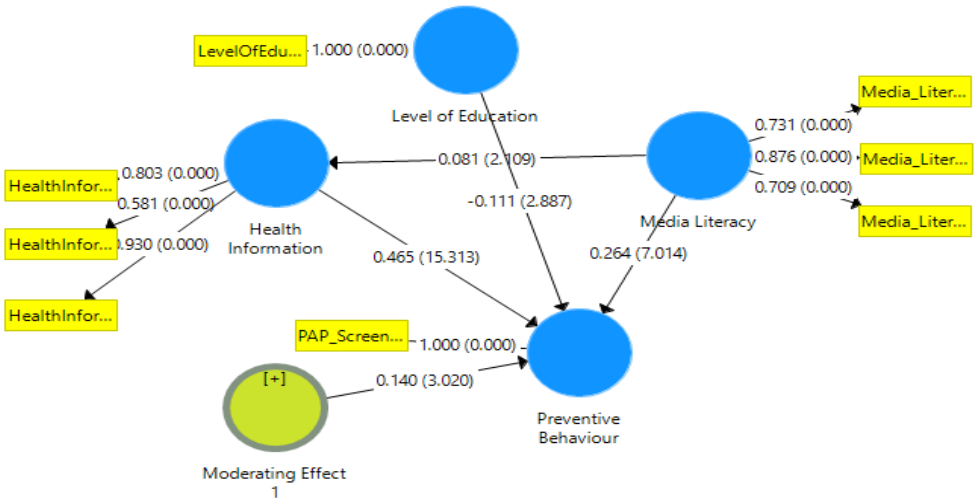

Figure 2: Path Model Media Literacy to Preventive Behavior with Level of Education Moderator.

The analysis of the study is exposed into the path modelling as presented in Figure 2, in which the level of education as the moderating factor has contributed towards other variables. As a result of this, the moderating factor has significantly promoted other dependent variables such as health information and media literacy in order to enhance cervical cancer preventive behaviors. The model acknowledges that by the presence of the moderating factor, the strength and the relationship of the construct becomes stronger than earlier. It proves that the moderating factor has established a role as a construct enhancement effect. Therefore, when the moderating factor increases in power, it significantly impacts the ability of the dependent variables to perform their principal functions and enhances the overall goal of reducing cervical cancer. Thus, when the level of education is increased, health information access and media literacy are able to encourage preventive behaviors much more readily.

CONCLUSION, LIMITATION AND SUGGESTIONS

This research has produced several results that can be clearly stated as conclusions. Firstly, that level of education, as a moderating factor, has a significantly substantial effect on the health information and media literacy enhancement of cervical cancer preventive behaviors. The more education that people have, the better chance they have of being exposed to health information, and of being able to synthesise that information usefully. People in academic settings are likely to be close to information pertaining to health, whether from fellow students pursuing those career paths or from general knowledge presented in a classroom. Then those persons, by virtue of that academic setting, will be better equipped with the mental tools to comprehend those sources of information, and they are likely to be

close to sources, which can further explain those items they do not fully understand. Level of education, therefore, is the common thread that contributes to these enhanced attributes of access to health information and effective media literacy. Level of education also relates to a person's interest in obtaining information in general, and specifically health information for the purpose of this analysis. Persons with a higher level of education are more likely to enjoy or otherwise appreciate the value of obtaining knowledge, and thus they are likely to be the persons who wish to seek out health information. Level of education thus not only increases a person's access to health information and their ability to comprehend it; but also serves as a marker for their desire for the information itself.

Secondly, this also supports the idea of McMahon (2009), that higher education brings many diverse benefits to the health system and economic growth of one's population. Increasing the value of human capital, by shaping better health systems to promote specific preventive behaviors, is shown to be a worthy goal; in part because it will also help to suppress the economic burden. Individuals with inadequate health conditions are a drain on the economy of their society in two principal ways. First, resources must be devoted to their care that could be otherwise spent on the advancement of the society rather than merely maintenance. Unhealthy individuals not only require medical facilities and medicines but also often need specialised facilities or adaptations to facilities that already exist, so they may participate in normal everyday functions. Secondly, the individual with poor health is unable to contribute fully to society as well. Thus, the society is deprived of any physical, or even often mental efforts, which the individual may have added to the society. Persons who are focused primarily on salvaging their own health are unable to pursue less immediate goals or long-term plans. Thus, initiatives in which improve the health systems of the populace indirectly improve the economic potential of the society as well.

We can, therefore, see that encouraging the understanding of health information, when synchronised with critical media literacy towards the VIA as the primary preventive behavior, boosts the enjoyment of a healthy lifestyle and prolongs life expectancy at the same time. Boosting the enjoyment of healthy lifestyles means that the citizenry finds greater satisfaction in their everyday lives. This improved mind-state allows people to produce a higher quality of work and means that they have less stress in their life. Stress is the leading factor in a vast array of illnesses. Thus, by reducing stress, the potential for additional negative health issues is also reduced. Secondly, a longer life expectancy compounds these advantages by ensuring that individuals are able to contribute to society for longer, which acts as an effective multiplier on the value of the human capital. Both of these results allow the citizenry to contribute more meaningfully and productively. This, in turn, means that society as a whole is able to enjoy greater prosperity and make further advancements. This coincides with Norsiah Mohd Sobhi and Norhafezah (2016) research which showed that empowering women to make good decisions relies on a comprehensive approach, which is based in the five key elements of: economy, social, cultural, legal, political, and psychology.

Level of education is thus seen to improve access to health information, media literacy, and societal economics, which in turn allow for improved standards of living. These simultaneous preventive behaviors will effectively help to reduce the cervical cancer incident rate as their general result. The reduction of cervical cancer rates will, in turn, allow for people in general to lead longer and more satisfying lives. Therefore, the issue of health

literacy, media literacy and information literacy must equip by the people in various social groups in the world (Oso & Akhagba, 2014).

The limitations of this study are that, firstly, it was conducted in the specific urban and suburban areas of Java island. This means that the study is limited in the kinds of persons who contributed to the data being used. Secondly, this study used self-reported data, which carries the potential for selective memory or exaggeration to impact the results. Therefore, we suggest that future studies on this topic can cross-reference self-reported data with official records to establish a reliability baseline. It can also be suggested that the next point of research should broaden the scope to include different islands or areas with different cultures, and then include the various cultures or lifestyles in the moderating analysis. That future research line can be done with the mixed method to have a greater understanding of how the level of education as the moderating factor plays a major impact on critical media literacy in reaching preventive behaviors towards the incident risk of cervical cancer.

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REFERENCES

Ali, M. N., Fleming, D., Salman, A., & Lyndon, N. (2017). Media Literacy in 'Big Kitchen (1952)' Historical Documentary. *SHS Web of Conferences*, 33. doi: 10.1051/shsconf/20173300050

Arb-aroon Lertkhachonsuk, M. (2014). Cancer prevention in Asia: Resource-Stratified Guidelines from the Asian Oncology Summit 2013. *The Lancet Oncology*, 4(12). doi:10.1016/S1470-2045(13)70350-4

Bray, F., Ferlay, J., Soerjomataram, I., Siegel, R. L., Torre, L. A., & Jemal, A. (2018). Global Cancer Statistics 2018: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 countries. *CA: A Cancer Journal for Clinicians*, 68(6), 394-424. doi: 10.3322/caac.21492

CDC. (2018). *Characteristics of an Effective Health Education Curriculum*. U.S: Department of Health & Human Services. Retrieved from https://www.cdc.gov/healthyschools/sher/characteristics/index.htm

Emma Mohamad, Nur Afiqah Mohd Haniff, Sabariah Mohamed Salleh, Abdul Latiff Ahmad, & Hasrul Hashim. (2015). *Jurnal Komunikasi: Malaysian Journal of Communication*, 31(2), 83-97.

Fauziah Ismail, & Bahiyah Omar (2018). Kesan Gaya Komunikasi Doktor Perubatan Terhadap Kepuasan Pesakit. *Jurnal Komunikasi: Malaysian Journal of Communication*, 34(3), 73-95.

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50. doi: 10.2307/3151312

GLOBOCAN. (2018). New Global Cancer Data: GLOBOCAN 2018. Retrieved from https://www.uicc.org/new-global-cancer-data-globocan-2018

Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Los Angeles: Sage Publications.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modelling. *Journal of the Academy of Marketing Science*, 43(1), 115-135. doi: 10.1007/s11747-014-0403-8

Lemeshow, S., Hosmer Jr, D. W., Klar, J., & Lwanga, S. K. (1990). Adequacy of Sample Size In Health Studies. Chichester: John Wiley & Sons Ltd.

McMahon, W. W. (2009). *Higher Learning, Greater Good: The Private & Social Benefits of Higher Education*. Baltimore: Johns Hopkins University Press.

NAMLE. (2013). National Association of Media Literacy. Retrieved from https://namle.net/publications/media-literacy-definitions/

Norsiah Abdul Hamid, Mohd Sobhi Ishak, & Norfahezah Yusof. (2016). Assessing Validity and Reliability of Social Media as an Empowerment Tool for a Group at Risk in Malaysia. *Jurnal Komunikasi: Malaysian Journal of Communication*, 32(1), 193-207.

Oso, L., & Akhagba, O. (2014). Media and Information Literacy and Democracy in a Multi-Ethnic Society. *Jurnal Komunikasi: Malaysian Journal of Communication*, 30(1), 170-186.

Potter, W. J. (2013). *Media Literacy*. Singapore: Sage Publications.

Radu G., Solomon, M., Gheorghe C. M., Hostiuc M., Bulescu I. A., Purcarea V. L. (2016). The Adaptation of Health Care Marketing to The Digital Era. *Journal of Medicine and Life*, 10(1).

Ringle, C. M., Wende, S., & Becker, J. M. (2015). *SmartPLS 3*. Retrieved from http://www.smartpls.com

Roldán, J. L., & Sanchez-Franco, M. J. (2012). Variance-based Structural Equation Modeling: Guidelines for Using Partial Least Squares in Information Systems Research. In M. Mora, O. Gelman, A. Steenkamp, & M. S. Raisinghani (Eds.), *Research Methodologies, Innovations and Philosophies in Software Systems Engineering and Information Systems*. Hershey: Information Science Reference. doi: 10.4018/978-1-4666-0179-6.ch010

Sorensen, K., Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., & Brand, H., (HLS-EU) Consortium Health Literacy Project. (2012). European Health Literacy and Public Health: A Systematic Review and Integration of Definitions and Models. *BMC Public Health*, 12(1), 80.

UNESCO. (2012). International Standard Classification of Education ISCED 2011. Retrieved from http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf

USAID's. (2015-2019). USAID'S Vision for Health Systems Strengthening. Retrieved from https://www.usaid.gov/sites/default/files/documents/1864/HSS-Vision.pdf

Wibowo, A. H. (208). The Language of Media Supporting Peace Journlism. *Jurnal Komunikasi: Malaysian Journal of Communication*, 34(3), 349-360.

Worsnop, C. (1996). *Assessing Media Work*. Mississauga: Wright Communications.