

Relationships of Self-Efficacy, Outcome Expectation, Career Intention and Career Exploration in Nutrition Science Student's Career Choice

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Abstract - *The international world agreed that in 2030, Sustainable Development Goals (SDGs) were goals that needed to be achieved well. Given the current focus of the world and Indonesia, especially on the issue of stunting, namely the high number of malnutrition such as low body weight and short stature. The existence of nutritionist in Indonesia is needed to improve the welfare of the community. The increasing number of nutritionists in Indonesia shows that career choices for nutritionists are high in demand by the students. Many of nutrition science students don't know clearly about their career options, they need to know career literacy to be able to determine their future. The career opportunities of the nutritionist are very vast and vary, so that career planning is an important thing that has a major influence on one's future. Career decision itself can be influenced by many factors, namely student exposure to the nutritional science profession or other factors such as self efficacy, outcome expectation, career intention and career exploration by the students themselves. By using SCCT, this study aimed to determine the career relationships of career choice and career decision-related behavior, which consists of career self-efficacy, career outcome expectations, career intention and career exploration. This research is an observational analytic study of 502 samples of nutrition science who have filled out an online questionnaire from July to August 2019. An online questionnaire consisting of a Career Decision Making Self-Efficacy-Short Form (CDMSE-SF), Career Decision Outcome Expectation (CDMOE), Career Exploration Planning or Intention Questionnaire (CEPI), Career Exploration*

Survey-Revised (CES-R), which has translated and validated. All models are analyzed using the maximum possible estimation of the AMOS application. This research showed that there was a significant relationship between age and mother's occupation.

This study concluded that there are proven significant relationship as shown on model above in which self efficacy shows direct influence to the career exploration specifically.

Keywords: *career choice, nutrition science students, Indonesia*

Introduction

The International World agrees that in 2030, Sustainable Development Goals (SDGs) are goals that must be achieved well. Given the current focus of the world and Indonesia in particular on the issue of stunting, namely the high number of malnutrition such as low body weight and short stature.¹ Nutrition improvement is carried out to realize the fulfillment of nutritional needs and includes efforts to improve the status and quality of nutrition, prevention, cure, and or recovery due to malnutrition. To achieve this, nutritionists are needed to master the nutritional problems being faced. The existence of a nutritionist in Indonesia is needed to improve the welfare of the community.²

The development of nutrition in the last few decades is very rapid, so it is said to be the era of Nutrigenomics. Various

educational institutions have begun to open nutrition studies programs.³ Lately there are more study programs or nutrition majors. In 2018 SBMPTN, the community nutrition department at Sriwijaya University had a capacity of only 39 students, but with quite a lot of interested ones, amounting to 1,124 people. It is estimated that competitiveness for the nutrition department in the 2018 SBMPTN is 3.47%.⁴

According to data from the Agency for the Development and Empowerment of Health Human Resources (BPPSDMK), there were 18,232 nutritionists in Indonesia in 2016.⁵ Then according to the recapitulation of health human resources by type of energy and province by the Ministry of Health of the Republic of Indonesia (Kemenkes RI), in 2018, there were 21,920 nutritionists in Indonesia. The increase in the number of nutritionists can illustrate the increasing interest in choosing nutrition as one of the profession's choices.

Nutrition education is listed in the attachment to the decision of the minister of health of the Republic of Indonesia number 374 of 2007, where nutrition education can be pursued through the academic strata I (S1) and diploma. After that, it can be continued with the professional path. The academic path begins with education in the Strata I (S1), Strata II (S2), and finally Strata III (S3). Whereas diploma courses start with Diploma III education and continue on Diploma IV education programs.²

A nutrition graduate is someone who has attended and completed at least a formal undergraduate nutrition education (S1) recognized by the government of the Republic of Indonesia. Meanwhile, registered dietitians or so-called Registered Dietitians (RD) are nutrition graduates who have attended professional education (internship) and professional examinations and have been declared granted the right to take care of permits in providing services and conducting

nutrition practices. For someone who has completed a Diploma III nutrition education in accordance with applicable regulations is called a registered nutritionist intermediate or Technical Registered Dietitian, where they have full duties, responsibilities and authority to carry out functional activities in the field of nutrition, food and dietetic services in the community, individual or hospital.²

The gap between exposure to nutrition career for nutrition students that occurs during college can cause career selection gaps. The development of academic and career interests is a process that occurs continuously and begins at a young age, where self-efficacy, outcome expectation and goals are the core of the process of developing one's academic interest and career exploration.⁷

The social-cognitive career theory perspective

The SCCT generally explains that self-efficacy (a person's trust in his ability to perform an action), outcome expectations (trust that an appropriate effort will produce results according to consequences) and goals are three important keys in career determination.⁷ This variable also relates to individuals, contextual and other variables to motivate career action such as career planning and exploration. Factors that play an important role in learning and influence each other include social, personal (cognitive) and behavioral factors. If one behavior occurs, it is caused by the interaction between the three factors. Cognitive factors emphasized are self-efficacy, outcome expectation and self-regulation which then form the basis of SCCT. SCCT itself aims to explain two things related to career development, namely: the development of one's academic and career interests and the way someone determines their academic and career choices.^{7,8,9}

Previous studies have shown the influence of sociodemographic factors with career selection determinants, such as

gender, social and economic status, race, and culture. Learning experiences will also affect self-efficacy, outcome expectation which will then affect one's interests, targets, actions and success in career development. The SCCT also assumes that a compromise in personal interests will be needed in the career selection process caused by personal conditions, such as cultural barriers and lack of family support.^{7,10}

Method

Participant

Data collection in this study used an online questionnaire conducted from July to August 2019. Participants in this study were 502 active students in nutrition education programs in Indonesia. Univariate and bivariate data analysis in this study used the SPSS version 22 application and used the AMOS application for multivariate analysis.

Material

Self-efficacy

Self-efficacy is an individual's belief in his ability that influences the way the individual reacts to certain situations and conditions.⁹ Self-efficacy is an individual's belief in evaluating his own ability to achieve goals, overcome obstacles and complete certain tasks.^{11,12} Self efficacy assessed using 24 items of the Career Self-Efficacy Sources Scale (CSESS) that has been translated into Indonesian and is a modification of the Career Decision-Making Self-Efficacy Scale-Short Form (CDMSE-SF) which combines Bandura's Self-efficacy theory with Career Maturity Crites theory. Determination of answers uses a scale of 1-5 (1 = very unsure and 5 = very sure) of questions such as about determining the most ideal career for yourself. Higher scores will be in line with the amount of confidence of the individual about his abilities.

Outcome Expectation

Outcome expectation focuses on the results or consequences that a person expects when he does certain behaviors. In the career context, outcome expectation is a belief in the consequences that will be obtained if someone performs career-related behavior.¹² Outcome expectations are assessed using 9 Career Decision Making Outcome Expectation (CDMOE) items that have been translated into Indonesian. Students will respond to statements such as "If I get good grades during lectures, I will get the career I want" on a scale of 1-5 (1 = strongly disagree and 5 = strongly agree). Higher scores due to the amount of confidence held in the results of the career they have.

Career Intention

Career intention is defined as the individual's intention to take actions related to career exploration such as plans to seek information or take part in certain activities related to the career he wants.¹² Career intention was assessed using 5 items of questions from the Career Exploration Planning or Intention Questionnaire (CEPI) which had been translated into Indonesian.¹² Responses given to questions such as "Looking for opportunities to show and practice my abilities" are in the form of a scale of 1-5 (1 = strongly disagree and 5 = strongly agree). Higher scores relate to the amount of intention to explore the desired career.

Career Exploration

Career exploration is an important stage in the development and decision making related to careers that includes career-related behaviors, such as: finding more specific information about careers, discussing with others about opportunities, learning new skills needed, and registering for personal skills improvement.¹² Career exploration was assessed using a questionnaire which was a modification of the Questionnaire-Revised Career Exploration (CES-R).¹³ Students will

respond in the form of answers to questions such as "Finding out various career possibilities that I might choose" using the frequency on a scale of 1-5 (1 = never and 5 = very often). Higher scores are in line with the high interest in exploring existing interests.

Statistic Analysis

All models were analyzed using the maximum likelihood estimation in AMOS. The parameters are χ^2 , Goodness of Fit (GFI), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). With 505 participants observed, a significant or a non-significant χ^2 , χ^2/df values > 3 , RMSEA > 0.07 showed that this data was poor fit, GFI values > 0.90 , TLI values > 0.90 , NFI and CFI values > 0.90 showed acceptable fit.¹⁵

The mediation pathways are examined using two models. The effects to be tested are both direct and indirect. Calculation of standard errors (SEs) and 95% confidence intervals (CIs) were performed for all direct and indirect estimates using AMOS bootstrapping.

Mediation happens when the predictor is correlated with the mediator and outcome, and the 95% CIs from the indirect effects via the mediator does not contain zero. Full mediation happens if the direct effect is decreased to zero when the mediator is included, and partial mediation happens when the direct effect is decreased significantly when the mediator is included.¹⁶

Result

From a total of 502 samples in the study, 56 (11.2%) samples were male and 446 (88.8%) samples were female. The age range of the sample in the study was 17-28 years. In the sample of 482 (96.0%) were single, while 20 (4.0%) were married, 425 (84.7%) samples had career plans and 77 (15.3%) did not have career plans. Table 1 showed the characteristics of participants and sociodemographic correlations with career choices. Age of the sample and mother's occupation is statistically related to career exploration.

Table 1. Characteristics of respondents; n = 502

Variable	Frequency	(%)	P value
Age			
Mean	20.05	-	0.000
Median	20.00		
SD	1.925		
Maximum	28		
Minimum	17		
Sex			
Male	56	11.2	0.181
Female	446	88.8	
Marital Status			
Single	482	96.0	0.371
Married	20	4.0	
Years			
2013	17	3.4	
2014	20	4.0	
2015	31	6.2	
2016	78	15.5	-
2017	109	21.7	
2018	149	29.7	
2019	98	19.5	
Levels of education			
D3	151	30.1	0.062
D4	93	18.5	
S1	254	50.6	
Profession	4	0.8	
Father's Occupation			

Non-Medical	492	98.0	0.491
Medic/paramedic	10	2.0	
Mother's Occupation			
Non-Medical	475	94.6	0.008
Medic/paramedic	27	5.4	
Family Income			
< Rp 5.000.000,-	189	37.6	0.113
Rp 5.000.000 s/d Rp 10.000.000,-	235	46.8	
> Rp 10.000.000,-	78	15.5	
Already have a career plan			
Not yet	77	15.3	-
Already	425	84.7	
Total	502	100.0	

The measurement model were good fit statistics, χ^2 (1, N = 502) = 19.511, $p \leq .000$, $\chi^2/df = 19.511$, CFI = .972, GFI = .981, TLI = .833, RMSEA = .192.

Factor loadings ranged from 0.043 to 0.591. Table 2 reported summary data, zero-order correlations, means, and standard deviations.

Table 2. Correlation, Mean, and Standard Deviation

Variabel	1	2	3	4	M	SD
1. Self-efficacy	-	0.571**	0.591**	0.594**	96.412	9.924
2. Outcome Expectation	0.571**	-	0.467**	0.392**	36.450	4.712
3. Career Intention	0.591**	0.467**	-	0.472**	21.017	2.717
4. Career Exploration	0.594**	0.392**	0.472**	-	86.537	14.988

Note. ** $p < .01$

The following model involved career self-efficacy which gave a direct influence on career exploration, career outcome expectation influenced career exploration, career self-efficacy influenced career intention, and career intention influenced career exploration. The model showed a fit match χ^2 (1, N = 502) = 19.511, $p \leq .000$, $\chi^2/df = 19.511$, CFI = .972, GFI = .981, TLI = .833, RMSEA = .192. In this model, all direct paths gave a significant effect seen from the value of

standardized direct effect two tailed significance $p < 0.05$ or $p < .01$. This model accounted for 32.6% of outcome expectation, 34.9% of career intention and 37.6% of career exploration. The total standard effect for self-efficacy was 0.162 (on career intention), self-efficacy 0.271 (on outcome expectation), self-efficacy 0.703 (on career exploration), outcome expectation 0.137 (on career exploration), and career intention on career exploration was 0.977. See Figure 1.

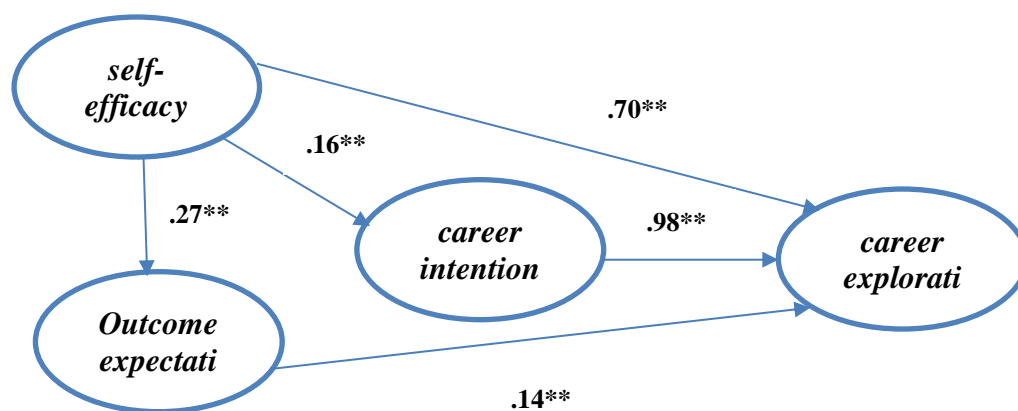


Figure. 1 The final model with standardized regression weights included. Only significant paths included to avoid visual clutter. * $p \leq .05$, ** $p \leq .01$

By using 1000 bootstrap samples, a direct effect test was conducted on self-efficacy towards outcome ($b=.571$, $p\backslash.002$), self-efficacy on career intention ($b=.591$, $p\backslash.002$), self-efficacy on career exploration ($b = .446$, $p\backslash.002$), career intention on career exploration ($b = .177$, $p\backslash.002$), outcome expectation on career exploration ($b= .043$, $p\backslash.406$). The mediating effect of career intention on career exploration (CIs = 0.053 to 0.201).

Discussion

In this study it was found that age was related statistically in career exploration. Where this is in line with previous research regarding the relationship between the stages of age as a factor influencing career choice.¹⁵ In this study sample obtained age range 17 to 28 years. This away age range can be caused by the transfer of programs, from advanced Diploma to Bachelor programs or from Diploma 3 to advanced to Diploma 4. Most students nutrition before continuing further education have sought work experience first. This is consistent with research that says that prior work experience can have an impact on further career selection.¹⁶ There are career stages consisting of pre-career stages, early career stages, middle career stages, and late career stages.¹⁷ Pre-career stage is a stage where a person was aged 15-22 years or in adolescence. At that age a person will try to develop self-identity, find the needs, interests, talents, and get an education, so it is also called the exploration stage. At the age of 22-30 years, someone just started entering the workforce. Where at that time the development of self confidence was accompanied by the practice of interacting and working together in the work environment. This illustrates that the age of 17 to 28 years is a crucial moment for career selection.

Training and counseling opportunities for honesty, personal and cultural values, and also parental guidance are factors that influence one's career selection process.¹⁸ In this study there is a

relationship between mother's work and career plans after graduation. This is consistent with the results of research in Nigeria which discusses that the work of parents has an influence on children's career choices.¹⁸ Where parents are one of the figures who often become role models, so that the profession of parents who work as medical/paramedical personnel can influence the selection of nutritional careers.¹⁹ Negative role models make students not want to follow the nature of the role models and positive role models can make students interested in following the careers that are undertaken by the role models.²⁰

This study aims to determine the relationship between career exploration-related behavior, which consists of career self-efficacy, career outcome expectation, career intention and career exploration, in the career selection of nutrition science students. Samples that have been obtained from filling out the questionnaire were analyzed using the SCCT framework. This theory was previously also widely used to explain other career selection activities.

Self efficacy is an individual's belief in evaluating his own ability to achieve goals, overcome obstacles and complete certain tasks. Meanwhile outcome expectancy focuses on the results or consequences that a person expects if he does certain behaviors.^{11,12} In this study it shows that self-efficacy, outcome expectation, career intention, and career exploration are interrelated and have a mutually significant effect.

This is consistent with research which states that Self-efficacy plays a role in improving outcome of expectation, especially if someone who has ability and successfully does something related to his career. The development of one's academic and career interests is a process that occurs continuously starting at a young age, where self-efficacy, outcome expectation and goals are the core of the process of developing one's academic interest and career exploration.⁷

Career intention is part of the choice goals, so someone will have the attitude and intention to do something related to the development and selection of his career that can be directly influenced by self efficacy or indirectly with career intention as the mediator.⁷ Attachment on outcome expectation can also affect career exploration.²² In this study also found that career intention acts as a mediator connecting self-efficacy to career exploration. This result is relevant to previous research that self-efficacy affects career exploration directly or indirectly through career intention as a mediator.²³

The role of mentors, friends of the same age and role models influences career selection in the formulation of career expectations and career decision selection. Can be conducted socialization selection career and profession early for nutrition science students to improve career exploration. The socialization will give a greater influence and help students to better know what career choices they can choose.^{22,24}

Conclusion

This study showed that there were many factors that influence career choice in individuals other than sociodemography. This research showed that there was a significant relationship between having a career plan and father's job. Based on the results and discussion of this study, it was concluded that self- efficacy, outcome expectation and career intention influenced the career exploration of dentistry students significantly both directly and indirectly.

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