

PRESERVICE AGRICULTURE TEACHERS' PERCEPTIONS OF CAREER BARRIERS AND SUPPORT

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Abstract

This descriptive study examined the perceptions of career barriers and career support of preservice agriculture teachers and determined if gender differences existed. Data were collected from 215 preservice agriculture teachers using a survey instrument administered by teacher educators at 35 institutions across the nation. Results showed participants were primarily Caucasian, grew up in rural areas, and were considering agricultural education as a first career. Participants perceived the likelihood of career barriers to be low and their level of career support to be high. The issues most likely to become barriers were found to pertain to family responsibilities and relationships, desire to live in a certain area, and an unwillingness to move away. Participants perceived the most support from their teacher educators, agriculture teachers, and cooperating/mentor teachers. No statistical or practical differences were found between perceptions of career barriers and career support for female and male participants.

Introduction/Theoretical Framework

The teaching profession is commonly considered a traditional occupation for women. However, agricultural education differs in that it is viewed as a male dominated field (Foster, 2001). In 1987, Knight found that only 5.1% of the nation's agriculture teachers were women. But, the United States Department of Labor (DOL) Women's Bureau (1990) reported that women made up 45% of the workforce in 1989. In recent years, the proportion of males and females in secondary agricultural education has shifted in a more equitable direction. In a 1998 nationwide survey, Camp (2000) reported that the percentage of female agriculture teachers had risen to 15.8%, and more recently, the survey showed the number had reached 22% (Camp, Broyles, & Skelton, 2002). The Camp et al. study also noted that 43% of newly qualified teachers of agriculture were female, which is much more in line with the DOL (2000) estimate that 48% of the workforce will be women by 2008.

As the number of women in agricultural education increased, researchers began to examine the potential barriers they faced

entering the profession. In a study of 369 male agriculture teachers in Ohio, Cano (1990) found perceptions of sexual discrimination were evident and brought upon by male agriculture teachers. Data indicated that female teachers encountered instances of sexual harassment by students and parents. Concerns of gender bias were also expressed in nominations for leadership positions within the professional organization. A study by Foster, Pikkert, and Husman (1991) found gender bias to be a definite deterrent to women considering the agricultural education profession.

Foster surveyed 579 female agriculture teachers in a 2001 national study. The results of the study showed that 61.7% of respondents reported experiencing barriers or challenges as a teacher due to their gender. When asked what they felt was the greatest barrier faced by female agricultural education teachers, the most common response was "acceptance by peers and other males in industry" (Foster, p. 392). Other areas that produced significant responses were: "balancing family and career, acceptance by administrators, acceptance by community, and gender-related issues" (Foster, p. 392).

A vast array of personal characteristics have an impact on the career choice process (Lent, Brown, & Hackett, 1994). These characteristics have direct effects on self-efficacy and outcome expectations (Fouad & Smith, 1996), which have been found to be significant predictors of preservice agriculture teachers' intentions to teach (Rocca, 2005). These characteristics include, but are not limited to, gender, genetic

predispositions, ethnicity, socioeconomic status (SES), and disability or health status (Lent et al., 1994). According to Social Cognitive Career Theory (SCCT), the guiding theory for this research, personal variables such as gender, ethnicity, and SES are linked to the learning experiences that shape an individual's beliefs of self-efficacy and outcome expectations (Lent et al., 1994; Figure 1).

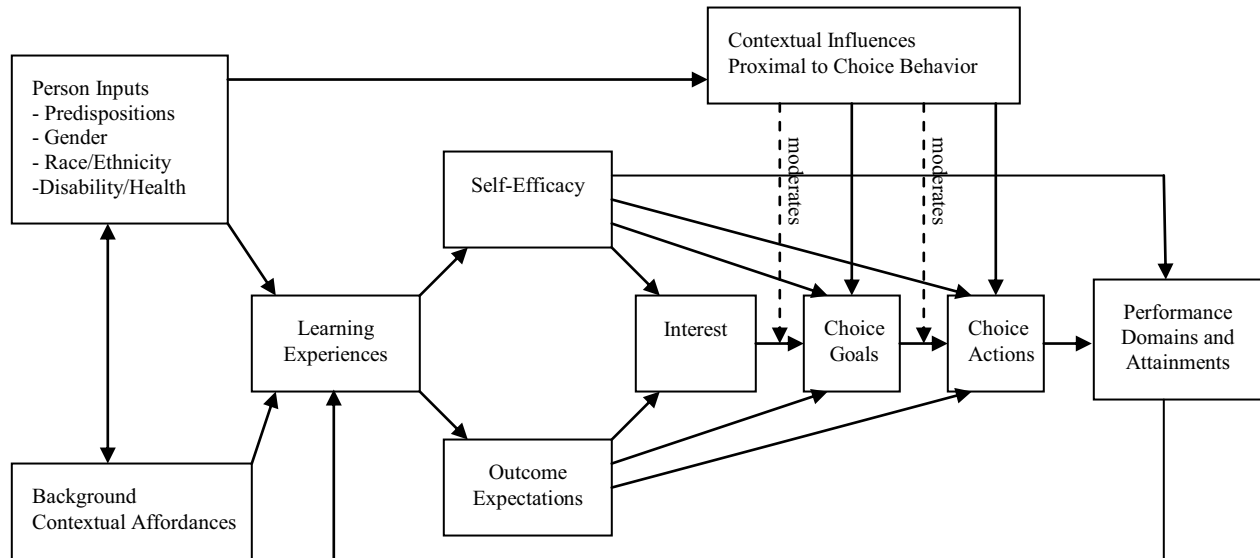


Figure 1. Model of person, contextual, and experiential factors affecting career related choice behavior (Lent et al., 1994). Copyright 1993 by R. W. Lent, S. D. Brown, and G. Hackett. Reprinted by permission.

Additionally, gender and cultural factors have been found to be linked to opportunity structures, which impact the academic and career goals an individual considers (Lent et al., 1994). Barriers such as gender stereotyping may strongly influence a person's career choice behavior whether or not the person perceives it. Since SCCT assumes individuals are active agents in the career choice process, the effect of stereotyping often depends on the individual's perception and response (Lent et al., 1994). Betz and Hackett (1981) concluded that family, the educational system, the mass media, and the culture at large shaped women's beliefs about their capabilities and their career aspirations. Since this landmark study, other researchers

have found similar results further demonstrating the impact of stereotyping on women's career aspirations (Hackett, 1995; Lucas, 1997). In more recent studies, evidence suggested that occupational gender stereotyping might be weakening. In their study of 108 college bound high school students, Post-Kammer and Smith (1985) revealed that a smaller disparity existed between male and female students' efficacy to pursue varied careers (Bandura, 1997). Similarly, when Lent, Brown, and Larkin (1984) examined self-efficacy in 42 high-ability men and women with similar past performance, they found that differences in achievement and persistence were more attributable to self-efficacy differences than gender.

In addition to barriers, supports or support systems are also conceived within SCCT as contextual influences (environmental variables) that exert an influence on formation and implementation of career pursuits (Lent, Brown, & Hackett, 2000). Lent et al. (2000) purported that to thoroughly study career roadblocks, it is essential to also study the environmental factors that can facilitate career choice and development. One such study by Wall, Covell, and MacIntyre (1999) found that high school male and female perceptions of support from peers, family, and teachers were predictive of students' perceptions of opportunity. In their investigation of 126 10th through 12th graders, Lapan, Hinkelman, Adams, and Turner (1999) found that students' perceptions of parental support were significant predictors of differences in self-efficacy, perceived value, and vocational interests across four of six groups representing each of Holland's (1966) career types. In undergraduate college students, parental encouragement has been found to have a significant effect on learning experiences, self-efficacy, and outcome expectations (Ferry, Fouad, & Smith, 2000).

The impetus for this study was derived from the review of the agricultural education and career development literature and the potential implications career barriers and support have on preservice agricultural teachers' decisions to enter the profession. Much of the extant literature related to this study was found to be rather dated, which provided further motivation for the present study as it may provide a more current picture of the perceived career support and barriers faced by preservice agriculture teachers. The SCCT (Lent et al., 1994) served as the theoretical frame. The conceptual framework was based on the premise that a person is more likely to translate their career-related interests into goals and goals into actions, if they perceive high support and few environmental barriers will impede their career efforts (Lent et al., 2000).

Purposes/Objectives

The purpose of this study was to describe and compare preservice agriculture

teachers' perceptions of career barriers and support. Five objectives were used:

1. Describe the demographic characteristics of preservice agriculture teachers in selected collegiate agriculture teacher preparation programs.
2. Describe the career barriers of preservice agriculture teachers perceived as the most likely to impede their decision to teach agriculture.
3. Describe the career support perceived to be the most encouraging of preservice agriculture teachers' decision to teach agriculture.
4. Describe the overall levels of career barriers and support perceived by preservice agriculture teachers.
5. Determine if a gender difference exists between the perceptions of career barriers and support of preservice agriculture teachers.

Procedures

The target population for this descriptive study consisted of all preservice agriculture teachers completing their teaching internship experience in agriculture teacher preparation programs during the 2004-2005 academic year. Using the 2004 directory of the American Association of Agricultural Educators (AAAE) a list of 89 teacher preparation institutions was generated and each institution was contacted. A convenience sample of 262 student teachers was selected from 42 institutions. This sample constituted all students completing their internship experience during the fall 2004 academic term. Given this sampling technique, attempts to generalize to future populations will be dependent upon the researchers' conclusion that the population of interest is similar to the present sample (Gall, Borg, & Gall, 1996). A description of respondents is provided herein, enabling researchers to compare this sample to the population.

Prior to collecting the primary data for this study, a pilot test was conducted to establish the validity and reliability of the researcher developed survey instrument. The

construct scales used in this study were developed based on similar scales found in the career development literature and previously determined to be valid and reliable. The instrument was pilot tested with a sample of 35 preservice agriculture teachers from three different teacher education programs not included in the study. One institution was selected from each of the three geographical regions of the AAAE. Results of the pilot test provided satisfactory Cronbach's alpha coefficients, ranging from .74 to .86, however the nature of the Teaching Support Scale is such that the sample size was minimal ($n = 7$). This scale included a "Not-Applicable" response item for those persons not present in a participant's life. By indicating a "Not-Applicable" on the Support Scale, a participant was excluded from the reliability analysis by SPSS, which led to a pilot test sample of seven. Therefore, the researchers conducted a post hoc reliability analysis to further validate the instrument. Results of the post hoc analysis provided Cronbach's alpha coefficients of .91 on the Teacher Support Scale ($n = 53$) and .86 on the Likelihood of Barriers Scale ($n = 207$).

The study procedures began early in the fall 2004 semester. An initial e-mail message was sent to the lead agriculture teacher educator at each targeted institution explaining the purpose of this study and soliciting participation. Institutions not replying to the email received a follow-up telephone call. Eligibility for this study mandated the institution had students completing their teaching internship experience during the fall semester, and a faculty member willing to administer the instrument at, or as near as possible to the conclusion of the academic term. Follow-up e-mails were sent to confirm teacher educators received the materials. Institutions not returning completed questionnaires by December first were sent an e-mail reminder. The final e-mail contact was made the first week of January, requesting an expeditious return of completed questionnaires or confirmation of the institution's decision to not participate in the study.

Of the 42 eligible institutions, responses were received from 34 (81%) representing

25 states. Completed questionnaires were received from 215 of the 262 preservice agriculture teachers at the participating institutions yielding a response rate of 82%.

Data were analyzed using the Statistical Package for Social Science (SPSS) 12.0. Descriptive statistics were used to analyze data for objectives 1 through 4. For the purposes of describing preservice agriculture teachers' construct scores, summated scores were categorized as low, moderate, or high. To do so, the possible range of construct scores was divided into equal thirds representing the three categories. Objective 5 was accomplished by calculating the summated scores (Clason & Dormody, 1994) of female and male participants and then comparing the group means using independent samples t-tests (Agresti & Finlay, 1997).

Findings

A little over one-half (52.1%) of the participants in this study were female ($n = 112$). The average age of participants was 24.06 years ($SD = 4.85$, $n = 215$). Participants ranged in age from 21 to 57 years. The participants were predominately Caucasian ($n = 198$) with 93.4% indicating such, 2.4% were Hispanic/Latino ($n = 5$), 1.9% were Native American/Alaskan ($n = 4$), 1.4% were African American ($n = 3$) and 0.9% were Asian ($n = 2$). Over 98% of the 212 respondents reported a cumulative grade point average above 2.5 ($n = 211$), with 34.4% reporting 2.6 to 3.0 ($n = 74$), 39.1% reporting 3.1 to 3.5 ($n = 84$), and 24.7% with a grade point average greater than 3.5 ($n = 53$).

Participants indicated 4-H involvement ranging from 0 to 8 years with an average of 5.19 years ($SD = 4.82$). They reported involvement in the National FFA Organization ranging from 0 to 10 years with a mean of 4.04 years ($SD = 2.40$). The total number of years participants were enrolled in middle and high school agriculture classes ranged from 0 to 7 years with a mean of 3.29 years ($SD = 1.73$).

When asked about the location of their childhood and adolescent home, 86% of respondents reported living in a rural setting, with 56.5% ($n = 121$) of participants living

on a rural farm and 29.9% ($n = 64$) living in a rural non-farm setting. Of the remaining participants, 10.7% ($n = 23$) reported their residence to be in a suburban area and 2.9% ($n = 6$) grew up in an urban setting.

For objective 2, participants were asked to indicate the likelihood of each item to be a barrier to their entry into the agriculture teaching profession. Means for the 16 individual scale items comprising the Likelihood of Career Barriers Scale are reported in Table 1. Individual item means measured on a five point scale were found to be between 1.36 and 2.86. Analysis of the item means for both female and male participants yielded similar results; however, means for female respondents were found to be slightly higher on most items. Both female and male participants indicated the issues most likely to impact their career decision process were the job location, family responsibilities, unwillingness to move, and marital relationships. However, respondents perceived these potential barriers to be only slightly to moderately likely to influence their decision to enter the agriculture teaching profession.

To accomplish objective 3, participants indicated their perceived level of support on the 14-item Teacher Support Scale. The individual item means of female and male participants are summarized in Table 2. Individual item means were found to range from 3.42 to 4.56. Participants reported the most encouraging sources of career support as university teacher educators, high school agriculture teachers, cooperating/mentor teachers, parents, and university advisors. Nearly all of the individual sources of career support were perceived by participants as either encouraging or strongly encouraging of the participants' career interests. Female participants reported slightly lower support in nearly all the scale items.

With objective 4, the researchers sought to describe the overall levels of career barriers and support perceived by preservice agriculture teachers. This was accomplished by calculating the participants' summated scores on the Likelihood of Career Barriers Scale. The likelihood of career barriers score was calculated by summing the values of the

16 items included on the construct. The possible range of summated scores was 16 to 80. Analysis of the data found participant scores between 16 and 66, resulting in a range of 50 (Table 3). The mean score of the 207 respondents was 30.80 ($SD = 9.98$). The mean score represents a low likelihood of career barriers, as the researchers established a priori that scores of 33 or less would be considered low.

The teacher support score was calculated by computing the mean value of the participants' responses on the Teacher Support Scale. Due to the "Not Applicable" response item included in this scale, summated scores were not reflective of the true nature of support experienced by the participants. For instance, an individual who indicated discouragement on all instrument items would have the same support score as an individual who indicated encouragement on eight items with the remaining eight being non-applicable. To achieve a score that reflected an individual's perceived level of support, means were calculated using only the items the individual respondent indicated were relevant in his or her case. Participants' mean support scores ranged from 2.60 to 5.00 (Table 4). The possible mean scores were between 1.00 and 5.00. The grand mean support score for the 214 respondents was 4.26 ($SD = .54$).

To accomplish the final objective, the researchers compared the grand mean scores of female and male participants to determine whether significant differences existed between males and females on the Likelihood of Career Barriers scale and the Teacher Support Scale. Table 5 summarizes the results of the mean comparisons. Females exhibited slightly higher grand mean scores on the Likelihood of Career Barriers Scale. Additionally, female participants reported slightly lower mean scores than their male counterparts on the Teacher Support Scale. However, results of independent samples t-tests yielded no significant differences between the overall mean scores of female and male participants on either of the construct scales. T-tests were conducted using an alpha level of .05, which was established a priori.

Table 1
Summary of Female and Male Participants' Responses on Individual Items of the Likelihood of Career Barriers Scale

Item	Females (<i>n</i> = 109)		Males (<i>n</i> = 101)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
No job opportunities in the area I want to live	2.86	1.38	2.66	1.25
Family responsibilities	2.79	1.37	2.37	1.20
Not willing to move away	2.68	1.48	2.26	1.24
Being married or in a long-term relationship	2.58	1.53	2.41	1.44
Gender discrimination	2.35	1.29	1.43	.82
Not being prepared enough	2.20	1.04	2.20	1.04
Not enough confidence in my teaching ability	2.10	1.01	1.83	.93
Pressure from spouse or boyfriend/girlfriend	1.95	1.07	1.88	1.05
None of my friends are agriculture teachers	1.76	1.27	1.42	.82
Not ready to leave school yet	1.72	1.20	1.71	.98
Lack of motivation	1.71	.84	1.71	.99
Others don't think I can do the job	1.65	.91	1.66	.99
Teachers don't support my career plans	1.52	.85	1.65	.98
Friends don't support my career plans	1.45	.75	1.43	.77
Racial/ethnic discrimination	1.38	.79	1.47	.89
Parents don't support my career plan	1.36	.83	1.40	.79

Note. Rating Scale: 1 = Not at all likely to 5 = Definitely Likely

Table 2
Summary of Female and Male Participants' Responses on Individual Items of the Teacher Support Scale

Item	Females			Males		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Your university teacher educator(s)	110	4.53	.67	101	4.54	.73
Your high school agriculture teacher(s)	94	4.43	.89	83	4.41	.86
Your cooperating/mentor teacher(s)	111	4.42	.83	101	4.56	.73
Mother	110	4.39	.92	100	4.50	.72
University advisor/guidance counselor(s)	104	4.37	.85	94	4.39	.81
Father	103	4.35	.92	97	4.37	.81
Other high school agriculture teacher(s)	96	4.27	.90	90	4.48	.80
Best friend(s)	109	4.22	.90	97	4.19	.80
Other university faculty	107	4.20	.83	101	4.07	.85
Sister(s)	77	4.17	.91	61	4.31	.85
Other relative(s)	106	4.12	.92	93	4.32	.78
Other friend(s)	109	4.01	.88	96	4.17	.80
Brother(s)	77	3.96	.92	72	4.15	.99
High school guidance counselor(s)	77	3.42	1.32	73	3.67	1.13

Note. Rating Scale: 1 = Strongly Discouraging to 5 = Strongly Encouraging. Not-applicable responses were coded as missing data when computing mean scores, which also accounts for fluctuation in the number of responses.

Table 3
Participants' Overall Perceptions of Career Barriers

Summated Score	Likelihood of Barriers Score ^a	
	<i>f</i>	%
16 to 24	64	30.9
25 to 33	70	33.8
34 to 42	47	22.7
43 to 51	18	8.7
52 to 60	7	3.4
61+	1	.5

^aSummated score for Likelihood of Career Barriers Scale

Table 4
Participants' Mean Teacher Support Scores

Mean Score ^a	<i>f</i>	%
2.6 – 3.0	5	2.3
3.1 – 3.5	21	9.8
3.6 – 4.0	47	22.0
4.1 – 4.5	67	31.3
4.5 – 5.0	74	34.6

^a Mean scores represent individuals' grand mean score on the 14-item Teacher Support Scale. Not-applicable responses were coded as missing data when computing mean scores.

Table 5
Gender Comparison of Perceptions of Career Barriers and Support

Scale	Gender	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Likelihood of Career Barriers Score ^a	Female	108	32.09	10.19	-1.96	.051
	Male	99	29.38	9.60		
Teacher Support Score ^b	Female	112	4.21	.51	1.42	.156
	Male	102	4.32	.57		

Note. Two-tailed probability reported

^aMean summated score for Likelihood of Career Barriers Scale

^bOverall mean score used for Teacher Support Score comparison

Conclusions/Recommendations/ Implications

Based on these findings, the researchers concluded that most of the preservice agriculture teachers in this study were considering agricultural education as a first career, given their relatively young average age. Most were Caucasian, had at least a 2.6 grade point average, were involved in 4-H and FFA, and were also enrolled in secondary agricultural education for at least four years. The vast majority were reared in rural areas, possessed some type of agricultural occupational experience, and held some non-agricultural occupational experience as well.

On average, these preservice agriculture teachers perceived the likelihood of career barriers to be low and their level of career support to be high. More than 80% of the preservice agriculture teachers indicated a low likelihood of experiencing career barriers. Complementing the low levels of perceived barriers were preservice agriculture teachers' perceptions of high support for their career decisions. According to Lent et al. (2000), ample support and few barriers are predicted to facilitate the process of transforming career interests into goals and those goals into actions. Additional research is warranted to confirm these findings in future populations of preservice agriculture teachers.

Some have suggested perceptions of barriers are related to an individual's gender (Foster, 2001; Foster et al., 1991). Contrary to the findings of stated previous research, gender discrimination was only perceived to

be a slightly likely barrier for preservice teachers in the current study. An analysis of the data yielded slightly higher perceptions of career barriers for female participants, however, no statistical or practical differences appeared to exist between the means of men and women. On average, both men and women felt that their family, relationships, home location, and willingness to move were slightly to moderately likely to impact their decision to enter the agriculture teaching profession. Based on these findings, the researchers believe these issues may provide greater reason for concern than that of gender discrimination. The impact of these barriers appears to be a potential challenge for all preservice agriculture teachers irrespective of gender. Further research is needed to examine these issues and the effect they may have on preservice agriculture teachers' decisions to enter the teaching profession.

Although most preservice teachers reported low likelihoods of experiencing career barriers, there were four items that were commonly reported to be more than slightly likely to become a barrier. These items pertain to their responsibilities for family and relationships, their desire to live in a certain area, and their unwillingness to move away. Preservice agriculture teachers' concerns about family and location of a job may have important implications for the profession. If a substantial number of preservice teachers' job opportunities are limited to a given area within a state, the question arises of whether teacher supply and demand is a national, state, or regional concern. For example, in a given state a

preservice teacher who hails from a certain geographical area may not consider any teaching positions outside of that region. Even with multiple openings left unfilled in other regions of the state, a newly qualified teacher may decide to pursue other occupations rather than having to relocate. In many cases, relocation may not be an option due to one's family, relationships, or financial situation. Research is needed to investigate the mobility of preservice agriculture teachers and the impact it has on teacher shortages. This information may provide further motivation to investigate the ongoing agriculture teacher shortfall as a regional issue. If a geographic region of a state continually struggles to find enough qualified teachers, an effort could be made to find potential teachers who are likely to want to teach there. Based on this regional supply concept, if an ample number of agricultural education students from different geographic regions in a state complete teacher education programs and consider positions close to home, it could provide a more balanced, stable supply of teachers who are familiar with the region and its agricultural industries. To implement such an idea, recruitment efforts may need to be broadened and additional emphasis placed on recruiting from those regions where the major shortages exist rather than focusing recruitment efforts solely on the areas that traditionally have strong secondary agriculture programs. By recruiting potential agricultural education students from programs in areas that suffer from shortages it may provide more new teachers who are willing to take teaching positions in those areas.

In addition to recruitment efforts, attention should also be paid to those individuals found to be the most encouraging of preservice agriculture teachers' career decisions. Participants perceived teacher educators, agriculture teachers, and their cooperating teachers as the most encouraging. This finding may have important implications for finding an answer to the teacher shortfall. The influence of agricultural educators should not be underestimated. Agriculture instructors are highly influential in students' decisions to pursue college and agriculture

careers (Kotrlik & Harrison, 1987). Hillison, Camp, and Burke (1986) found that agriculture teachers were the fourth most influential people in determining whether a student chooses an undergraduate major in agricultural education. Based on this information, agriculture teachers need to not only encourage their students, but also discuss in a positive light the opportunities provided to students with a career teaching agriculture. Agriculture teachers must recognize that they serve as role models for their students and demonstrate what it is to be an agriculture educator. This study further demonstrates the importance of that influence and of encouragement from teachers in the profession. As positive role models, agriculture teachers have the potential to make an impact in the profession by assisting with the reduction of the teacher shortage. This requires that educators not only do their part by providing a quality program to prepare their students, but also contribute by becoming advocates for agricultural education and the career opportunities it provides.

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