



How Perception, Gender, Parental Occupations and Role Models Shape Gippsland Secondary School Students' Agriculture Career Choices

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Abstract

This article explores the factors influencing Gippsland secondary school students' career aspirations in agriculture, examining the role of perceptions of agriculture and agricultural careers, gender, parental occupation, and career role models. Utilising data from the Raising Aspirations and Careers Education in Agriculture Gippsland (RACE Gippsland) project, survey responses from 495 high school students were analysed using chi-square tests and Spearman's rank-order correlations. Positive perceptions of agriculture significantly correlated with career interest, for both males and females. Gender and parental occupation in agriculture had no significant influence on students' career choices and the presence of a career role model within the agricultural sector was a strong predictor of career interest. The research underscores the need for targeted interventions to improve agricultural literacy, enhance career exposure, and encourage student engagement in agricultural careers. It provides valuable insights into understanding the agricultural career aspirations of secondary school students. This research analyses factors impacting career aspirations of secondary school students within the agricultural sector, which is rare in the literature.

Keywords: *rural, secondary school students, career aspirations, agriculture*

Introduction

Secondary school students are the future of our society. Every year, students are faced with the important choice about what they want to do with their lives, and this choice directly impacts our society as they join the workforce. Young Australians are aspiring only to a limited number of professions within fields such as healthcare, education and engineering due to the job security, stability and career progression offered (Binks et al., 2018). Many fields are consequently being neglected, with one of these being agriculture (Cosby et al., 2022).

Agriculture is the cornerstone of Australia's economy. Supporting a significant component of Australia's gross domestic product, at 82.4 billion Australian dollars in 2023/2024, agriculture

directly employs over 315,600 people (Australian Bureau of Agricultural and Resource Economics and Sciences, 2025). Over 1.3 million people are also indirectly employed in roles associated with research, transport, banking, and marketing that centre on servicing the agriculture industry (Australian Food and Agriculture Industry Taskforce, 2024). Despite the importance that agriculture has on Australian society, students have a limited understanding of the industry in general and what careers are available (Brandt et al., 2017). This is contributing to a decline in interest in pursuing agriculture-related careers (Binks et al., 2018).

Literature Review

There are significant challenges to attracting people to a career in agriculture. One major barrier stems from the common perception that agriculture relates only to labour-intensive work (Girdziute et al., 2022). This misconception conceals other opportunities within the field, including roles in sustainability, technology, scientific research and business management (Melchior & Newig, 2021). The disconnect to agricultural workplaces has left many careers within the space invisible to the public. Careers involving agricultural engineering, precision farming or data analytics, for example, are very rarely showcased, and this has resulted in a limited awareness of their existence (Melchior & Newig, 2021).

There is a major disparity between metropolitan students and rural students with regards to employment and career aspirations. Rural and regional students have lower attainment rates for tertiary qualifications and have limited access to post-school training, contributing to higher unemployment rates in rural areas (Archer et al., 2024). To prevent the need to migrate for education, it is crucial to raise rural and regional students' awareness of careers within the agricultural space (Archer et al., 2024).

In this review of the literature, factors related to career choices including perceptions, gender, parental occupation and role models are discussed. Social Cognitive Career Theory (Lent & Brown, 2019) and its application to agricultural careers will then be reviewed. Finally, the rationale for the current research project will be made and hypotheses presented.

Perceptual Barriers to Careers in Agriculture

Agricultural literacy refers to understanding agriculturally related scientific and technologically based processes, as well as the broader environmental and social significance of agriculture (Brandt et al., 2017). One recent study found that developing agricultural literacy in school-aged children through formal education is critical (Cosby et al., 2022). Many students struggle to understand the diversity in agriculture and have more knowledge about science, technology, engineering, and mathematics careers (Brandt et al., 2017). Although rural-based students hold higher informal agricultural knowledge compared with students of an urban population, there still exists a gap in knowledge of what a career in agriculture means (Whitehead & Estep, 2016; Woodroffe et al., 2017). Students residing in a rural or regional location can remain unaware of the careers on offer without a direct connection to agriculture (Woodroffe et al., 2017).

Disconnection to careers in agriculture prevents awareness of available career options, prompting missed opportunities to contribute to the agricultural workforce in unique and creative positions within regenerative and sustainable agriculture, food innovation and precision farming (Melchior & Newig, 2021; Lans et al., 2020). To develop their agricultural literacy and knowledge surrounding careers in the field, students must gain a genuine interest in agriculture (Brandt et al., 2017). This interest may stem from learning that agriculture will make a positive impact on society or that agriculture is important for feeding the future of the world. There are several factors that will impact how students will gain these perceptions of agriculture and the influence of their parents and other role models is vital (Gore et al., 2015). This study aims to examine how these perceptions of agriculture impact student's interest in the field and seeks to explore patterns in the data related to perceptions.

Gender Barriers for Women in Agriculture

One deterrent to young people in Australia joining the agricultural workforce are the challenges that women in agriculture face (Newsome, 2021). Agriculture remains to be a male-dominated field. Women make up a significantly smaller percentage of the agricultural workforce in Australia, with only 31% of agricultural workers identifying as female (Australian Bureau of Statistics, 2024). Historically, women have faced challenges pursuing careers in agriculture and being recognised as a farmer (Hamrita, 2021). Studies examining the impact of traditional gender roles on occupational choices found that males are more likely to pursue careers in agriculture due to the perception that it is a male-dominated field associated with masculine traits (Conlon et al., 2023).

Gender stereotypes and societal expectations strongly shape women's career choices, prompting many to discount agriculture as a viable pathway and instead pursue more socially acceptable careers in healthcare, education, and the arts (Olsson & Martiny, 2018; Dunlap & Barth, 2023). Despite on-farm roles frequently being viewed as masculine, enrolments in agriculture, environmental and related tertiary studies show that approximately 60% of students are women (Department of Industry, Science and Resources, 2024). These patterns align with the findings of this study, which examines how gender norms impact student's interest in agriculture and aims to discover patterns in the data related to gender.

Impact of Parental Occupation on Agricultural Career Interest

Parents provide direct guidance and support when it comes to choosing a career (Gore et al., 2015). They also model career-related attitudes and behaviours (Cullaty, 2011). Recent studies have examined the impact that parental occupation can have on a student's career aspirations. Familial influence is one of the most influential factors in the career determination of secondary school students (Noack et al., 2010). It is common for students to choose the same career path as their parents, due to the familiarity and past exposure to the profession (Noack et al., 2010). Students with parents working in the agriculture industry, for example, gain valuable exposure to the industry and are more likely to positively perceive it as a career pathway (Abdul Rahaman et al., 2023). Lacking this exposure and guidance surrounding agriculture has been found to negatively impact one's perception of the field, diminishing interest in pursuing it (Cancino, 2022). The following study seeks to explore how parental occupation impacts student's likelihood to pursue a career in agriculture, particularly when the parent's careers are related to the field.

The Relationship Between Career Role Models and Agriculture Career Interest

There has also been significant importance placed on having a role model for one's preferred career (Kricorian et al., 2020). This role model can be in the form of a friend, family member, teacher, peer or family friend. Role models have major influence over a student's likelihood of choosing a specific career (González-Pérez et al., 2020). By showcasing the possibilities of professions within the field, role models can assist students to move past misconceptions about agriculture (Noack et al., 2010). Role models can also enhance students' self-efficacy by enabling them to believe in their ability to not only succeed in agriculture but find a true connection and purpose within the industry (González-Pérez et al., 2020). This is a central concept of Social Cognitive Career Theory (Lent & Brown, 2019). This study seeks to establish the impacts that agricultural career role models have on secondary school students' likelihood of pursuing a career in agriculture.

Social Cognitive Career Theory and Agricultural Careers

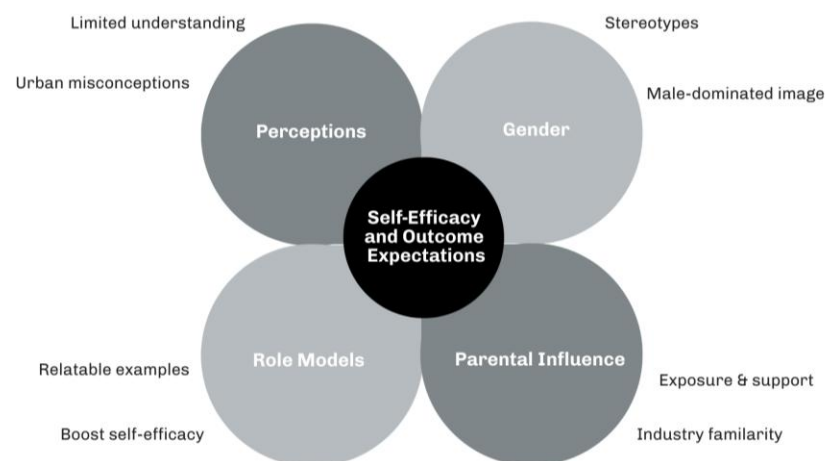
There is currently a growing body of work on vocational psychology that seeks to examine vocational behaviour, improve career interventions and inform policies surrounding issues in career development (McIlveen, 2015; McIlveen & McDonald, 2019). One of the overarching theories of career development is the Social Cognitive Career Theory (Lent & Brown, 2019). This

theory examines the interplay of various factors including gender, environment, social influences and learning experience, which collectively shape an individual's career trajectory and self-efficacy (Lent & Brown, 2019). Social Cognitive Career Theory explores how an individual's confidence in their ability to successfully accomplish tasks will determine their willingness to pursue a career (Lent & Brown, 2019). It explores the impact of role models and how they influence an individual's career (Wang et al., 2022).

Self-efficacy and outcome expectations are central to Social Cognitive Career Theory (Sheu et al., 2018). Sources of self-efficacy and outcome expectations include performance accomplishments through mastery experiences, vicarious learning by observing others and verbal persuasion and encouragement from others (Lent et al., 2017; Abbasianchavari & Moritz, 2021). These factors influence how confident an individual feels about their ability to achieve a career goal (Conklin et al., 2013) and influences what they believe the consequences of achieving that goal will be (Lent et al., 2017). Career role models provide a source of self-efficacy through persuasion and vicarious experiences and stories they may share (Conklin et al., 2013).

Social Cognitive Career Theory explores how role models and gender fit within the theory (Lent & Brown, 2019). There is research on gender and self-efficacy, gender and outcome expectations and gender and career interests (González-Pérez et al., 2020). Past Social Cognitive Career Theory research has explored impacts on the adult workforce. However, to date, research in vocational psychology has not strongly examined the career aspirations of young people in agriculture, particularly those from a rural background (McIlveen, 2015). As shown in Figure 1, perceptions, gender, parental occupation and role models interact to influence students' self-efficacy and outcome expectations, which are key determinants of career interest and choice (Lent et al., 2017; Conlon et al., 2023). These factors shape how students view their capabilities and future in agriculture.

Figure 1: Overview of Barriers and How They Interact



The Current Research Project

Past research has not yet considered the interplay of each of these factors on secondary school students' agricultural career interests and choices. It is therefore imperative to expand research in this area to determine how to increase interest in this field and encourage young people to develop their understanding of the world of work and consider agricultural careers. This will contribute to addressing the workforce shortage within the field due to the aging population, enhance overall

food security with more food production and boost regional economies by creating jobs (Lans et al., 2020).

Victoria is one of Australia's leading producers and exporters of food, with over 60% of its land used for agricultural activities (Department of Jobs, 2024). In Gippsland specifically, the agri-food sector is the largest contributor to the economy, representing \$7 billion of Gippsland's \$15.8 billion gross regional product (Department of Jobs, 2024). The agricultural industry is becoming increasingly important in the Gippsland region as other industry sectors decline. The reduction of the native timber (East Gippsland Shire Council, 2021) and mining industries (O'Loughlin et al., 2024) in particular, are limiting employment opportunities for both the current and future generations. Despite the vitality of the agriculture sector in this region, evidence suggests that even students in these rural regions have limited knowledge about the industry and what careers exist within the industry (Cosby et al., 2022). Due to the increased need for food production for our growing society and the importance of economic development in the region, it is vitally important to raise rural and regional students' aspirations to pursue further study and a career in agriculture (Cosby et al., 2022).

The original project team delivered the RACE Gippsland project to increase access to learning opportunities, improve knowledge of future pathways and career options, and enhance engagement and connections with role models in agriculture across the Gippsland region. This study will use data collected from the Industry School Partnership activity as part of the RACE Gippsland project to understand how perceptions, gender, parental occupation and role models impact the likelihood that secondary school students will seek a career in agriculture. Better understanding the relationship between different predictors of career interests and choices in this context will assist with improving future interventions.

Guided by Social Cognitive Career Theory, the following hypotheses are proposed.

Hypothesis 1

Students with more positive perceptions of agriculture and agricultural work will be significantly more likely to express interest in pursuing a career in agriculture. According to Social Cognitive Career Theory, outcome expectations directly influence interest and career choice. When students perceive agriculture as a meaningful or innovative field, their likelihood of considering it as a career should increase (Cosby et al., 2022).

Hypothesis 2

Male students will be significantly more likely than female students to express interest in pursuing a career in agriculture. Gender differences in career aspirations are well-documented within Social Cognitive Career Theory, often due to differential socialisation, perceived self-efficacy, and access to gender-typed role models. Past research has found that agriculture is often stereotyped as a male-dominated field, which can deter female students from seeing themselves in such roles (Conlon et al., 2023).

Hypothesis 3

Students whose parents are employed in agriculture or related industries will be more likely to express interest in pursuing a career in agriculture. Social Cognitive Career Theory highlights the role of contextual influences, including family background and social support, in shaping career decisions. Exposure to agriculture through parental occupation may enhance self-efficacy and normalise agricultural work as a legitimate and desirable career path (Abdul Rahaman et al., 2023).

Hypothesis 4

Students who report having access to career role models in agriculture will be more likely to express interest in pursuing a career in agriculture. Role models serve as powerful sources of vicarious learning and can significantly influence students' self-efficacy and career aspirations, particularly in fields where students lack direct experience. Social Cognitive Career Theory emphasises that access to supportive figures can counteract perceived barriers and foster greater interest in each career (Conklin et al., 2013).

Materials and Methods

Data present in this paper was collected from a convenience sample of secondary school students following the completion of the RACE Gippsland project delivered between 2020-2023. The participants in this program were secondary school students in years seven to twelve who attend school in Gippsland Victoria, Australia (N = 546). The data collected is ordinal data and is not normally distributed and therefore, the non-parametric Spearman's rank order correlation was utilised to examine these relationships.

Survey Questions

Students were asked to complete a survey containing both close-ended and open-ended questions. Participation in the survey was voluntary, and the students could cease their participation at any time. The survey data used a subset of the pre-existing dataset collected in the RACE Gippsland project and includes 23 questions relevant to the student's future studies, career aspirations, agriculture and agricultural careers. Ethics approval was granted on 05 February 2021 through the Central Queensland University Human Research Ethics Committee (Approval Number HEA22822).

Statistical Analysis

All statistical analysis was conducted using software program SPSS (IBM Corp, 2024). Descriptive statistics were run for each variable. Hypothesis testing was conducted through completion of a non-parametric Spearman's rank order correlation and chi-square tests of independence.

Given the nature of the variables involved, different statistical methods were appropriately selected. To test Hypothesis 1, a non-parametric Spearman's rank-order correlation was used to assess the relationship between students' ordinal perception scores and career interest (Field, 2018). For Hypotheses 2-4, chi-square tests of independence were conducted to examine associations between the categorical variables of gender, parental occupation, and role models, and career interest (Pallant, 2020). Two a priori power analyses were conducted using G*Power version 3.1.9.7 (Faul et al., 2007) to determine the minimum sample size required to test the study hypotheses. As four inferential tests were planned, the post-hoc Bonferroni correction was therefore utilised to set the p value to a significance value of 0.0125 to reduce the risk of a type 1 error.

An assumption for chi-square tests is that each cell must have expected counts of no less than five. When examining the cell counts for hypothesis four, it was evident that this assumption was not met. To address this issue, for all chi-square tests, the categories of 'strongly agree' and 'agree' were combined into one category of 'agree', and 'strongly disagree' and 'disagree' were combined into one category of 'disagree' (see Table 2). Frequency counts for perceptions of agriculture for the 5-point Likert scale are detailed in Table A1 (see Appendix). When conducting the analysis, pairwise deletion was utilised to exclude cases with missing data. Hypothesis four relates to the question: 'do you have a family member or family friend who owns a farm or works in agriculture', to which some students answered, 'I don't know'. Due to the ambivalence of this answer, this data was removed from the analysis.

Participant Information

There was a total of 546 participants, with 278 male and 217 female. Data screening identified that 22 people did not report their gender. 16 people reported that they were non-binary and 13 people responded with prefer not to say. Data was recoded into 1 for male and 2 for female, with individuals identifying as non-binary and prefer not to say being removed from the dataset. The final sample size for our study was 495 participants. The ages of participants ranged from 12 to 19 ($M = 14.62$, $SD = 1.367$) and the year levels ranged from year 7 to year 12 ($M = 8.82$, $SD = 1.940$).

Results

Data Screening and Assumption Testing

Frequency counts for all variables were examined (see Table 1).

Table 1: Frequency Counts for Parental Occupation and Role Model in Agriculture (n = 495)

Variables	Male	Female	Missing data
At least one parent who works in agriculture	20	18	301
No parent who works in agriculture	83	73	
Career role model/knows someone who works in agriculture	156	116	98
Does not know someone who works in agriculture	74	51	

Frequency counts for all variables were examined (see Table 2).

Table 2: Frequency Counts for Perceptions of Agriculture for the 3 Point Likert Scale (n = 495)

Item	Disagree	Neutral	Agree	Missing
1. I could do something I am interested in and good at in agriculture (n= 435)	109	158	168	82
2. Agriculture is important to the future of the world (n = 312)	5	40	267	205
3. I could earn good money in agriculture (n = 437)	35	143	259	80
4. I can make a difference to the future of the world in agriculture (n = 440)	88	177	175	77
5. Agriculture is interesting to me (n = 446)	96	162	188	71
6. I am interested in pursuing a career in agriculture (n = 437)	170	153	114	80

The Impact of Perceptions of Agriculture: Hypothesis 1 Supported

The first hypothesis being tested is whether those with more positive perceptions of agriculture will be more inclined to seek a career in agriculture. Gender differences were examined through isolating data for males (see Table 3) and females (see Table 4).

Table 3: Correlations Table for Male Participants and Their Perceptions of Agriculture (n = 278)

Variable	I am interested in pursuing a career in agriculture	I could do something I am interested in and good at in agriculture	I could earn good money in agriculture	I can make a difference to the future of the world in agriculture	Agriculture is interesting to me
I could do something I am interested in and good at in agriculture	.728* n = 244				
I could earn good money in agriculture	.426* n = 243	.544* n = 245			
I can make a difference to the future of the world in agriculture	.563* n = 245	.547* n = 247	.453* n = 246		
Agriculture is interesting to me	.601* n = 242	.679* n = 244	.445* n = 243	.569* n = 245	
Agriculture is important to the future of the world	.167 n = 155	.327* n = 156	.519* n = 156	.268* n = 157	.261* n = 162

Note. * indicates $p < .001$.

Table 4: Correlations Table for Female Participants and Their Perceptions of Agriculture (n = 217)

Variable	I am interested in pursuing a career in agriculture	I could do something I am interested in and good at in agriculture	I could earn good money in agriculture	I can make a difference to the future of the world in agriculture	Agriculture is interesting to me
1. I could do something I am interested in and good at in agriculture	.674* n = 185				
2. I could earn good money in agriculture	.239* n = 187	.358* n = 184			
3. I can make a difference to the future of the world in agriculture	.438* n = 188	.507* n = 184	.376* n = 187		
4. Agriculture is interesting to me	.401* n = 184	.449* n = 181	.281* n = 184	.502* n = 184	
5. Agriculture is important to the future of the world	-.139 n = 140	-.043 n = 138	.347* n = 141	.171 n = 141	.284* n = 148

Note. * indicates $p < .001$.

The Impact of Gender: Hypothesis 2 Rejected

The second hypothesis being tested is that there is an expected relationship between gender and interest in a career in agriculture, such that males will be more likely to be inclined to seek a career in agriculture. A chi-square test of independence was performed to examine the relationship between gender and the likelihood of seeking a career in agriculture (see Table 5). The relationship between these variables was not significant, $\chi^2(2, N = 434) = 4.61, p = .100$, indicating no link between gender and likelihood of seeking a career in agriculture.

Table 5: Observed and Expected Counts of Gender and Interest in a Career in Agriculture from a Chi-square Test of Independence (n = 434)

			How much do you agree with the following statement: I am interested in pursuing a career in the agriculture industry			Total
			Disagree	Neutral	Agree	
Gender	Male	Count	88	84	73	245
		Expected Count	96.0	85.2	63.8	245.0
	Female	Count	82	67	40	189
		Expected Count	74.0	65.8	49.2	189.0
Total	Count	170	151	113	434	
	Expected Count	170.0	151.0	113.0	434.0	

The Impact of Parental Occupation: Hypothesis 3 Rejected

The third hypothesis being tested is whether those with parents in agriculture-related occupations will be more inclined to seek a career in agriculture. A chi-square test of independence was performed to examine the relationship between parental jobs in agriculture and likelihood of seeking a career in agriculture (see Table 6).

Parental occupation was split into related to agriculture and not related to agriculture. This was further screened through combining parental occupation into the category of at least one parent in agriculture. Furthermore, the categories of 'strongly agree' and 'agree' were combined into one category of 'agree', and 'strongly disagree' and 'disagree' were combined into one category of 'disagree'. Therefore, the three categories are 'disagree', 'neutral' and 'agree'. The relationship between these variables was non-significant, $\chi^2(2, N = 171) = 2.02, p = .36$. This indicates no link between parental occupation and likelihood of seeking a career in agriculture.

Table 6. Observed and Expected Counts of Parental Occupation and Interest in a Career in Agriculture from a Chi-square Test of Independence (n = 171)

			Parent Job in Agriculture		Total
			No Parent in Agriculture	At Least One Parent in Agriculture	
How much do you agree with the following statements: I am interested in pursuing a career in the agriculture industry	Disagree	Count	56	8	64
		Expected Count	52.8	11.2	64.0
	Neutral	Count	47	11	58
		Expected Count	47.8	10.2	58.0
	Agree	Count	38	11	49
		Expected Count	40.4	8.6	49.0
	Total	Count	141	30	171
		Expected Count	141.0	30.0	171.0

The Impact of Career Role Models: Hypothesis 4 Supported

The fourth hypothesis being tested is whether career role models and having a family member or family friend who owns a farm or works in agriculture has a significant impact on the likelihood of choosing a career in agriculture. A chi-square test of independence was performed to examine the relationship between a career role model and likelihood of seeking a career in agriculture (see Table 7). The relationship between these variables was significant, $\chi^2(2, N = 358) = 16.69, p < .001$. This indicates a link between career role models and likelihood of seeking a career in agriculture.

Table 7: Observed and Expected Counts of Career Role Model and Interest in a Career in Agriculture from a Chi-Square Test of Independence (n = 358)

			Does anyone in your family, or a family friend, have a farm or work in agriculture?			
			Yes	No	Total	
How much do you agree with the following statements: I am interested in pursuing a career in the agriculture industry	Disagree	Count	79	58	137	
		Expected Count	94.5	42.5	137.0	
	Neutral	Count	88	36	124	
		Expected Count	85.6	38.4	124.0	
	Agree	Count	80	17	97	
		Expected Count	66.9	30.1	97.0	
			Count	247	111	358
	Total		Expected Count	247.0	111.0	358.0

Discussion

Career development theories are used to understand why people develop interests and how this shapes their career choices (McIlveen, 2015). Social Cognitive Career Theory was used in the context of this study to explore how to improve career interventions by examining the influence between gender, environment, social influences and learning experiences, which all combine to develop an individual's self-efficacy in their career field and influence career interests and career choices (Lent & Brown, 2019).

Perceptions

The first hypothesis was that students with more positive perceptions of agriculture would be more inclined to seek a career in agriculture. According to Social Cognitive Career Theory, lacking a personal connection to agriculture reduces the likelihood of pursuing it as a career (Lent & Brown, 2019).

Under Social Cognitive Career Theory, task self-efficacy is a strong predictor of career interest (Sheu et al., 2018). However, the items measured to test this hypothesis primarily assessed general self-efficacy by evaluating interest in pursuing a career in agriculture. In the present study, it is argued that the belief that one could do something they are interested in and good at in agriculture approximates self-efficacy, with a particular focus on the phrase 'could do'. Furthermore, the belief that agriculture is important for the future of the world, the expectation of earning a good income in agriculture, and the belief that one could make a difference to the world through agricultural work are considered indicators of outcome expectations, as they indicate a range of outcomes that can be obtained by pursuing work in agriculture (Luc, 2020). Finally, career interest is conceptualised as being related to the belief that agriculture is interesting.

Findings indicated that for both males and females, belief that agriculture is important to the future of the world did not significantly correlate with career interest in agriculture. This indicates that disclosing to someone that agriculture is important to the future is not a good predictor of persuading them to pursue agriculture. This aligns with other findings from recent studies that have identified various factors influencing individuals' decisions to pursue agricultural careers (Feldpausch et al., 2019; Hand et al., 2023). A study conducted by Feldpausch and colleagues found that students' attitudes towards agriculture, their agricultural knowledge, perceived

behavioural control and career planning were the most influential factors in predicting intentions to enter agricultural-related careers (Feldpausch et al., 2019).

These findings that self-efficacy is the strongest predictor of career interest indicate the importance of increasing self-efficacy within this population (Feldpausch et al., 2019). Building self-efficacy and fostering interest may be done through aligning individual interests with agriculture and offering hands-on experiences for students to participate in agricultural-related activities (Brandt et al., 2017; Roy, 2023). Merely providing information is insufficient to inspire agricultural careers and it is crucial that intervention programs instead prioritise fostering the self-efficacy of students (Feldpausch et al., 2019). Most students in the study held positive views of farming and agriculture, highlighting potential for engagement through targeted efforts.

Gender

The second hypothesis was that males would be more inclined to seek a career in agriculture, reflective of historical trends related to gender norms in male-dominated industries like agriculture (Conlon et al., 2023). The results from this study indicated that there were no significant differences between the genders, which is inconsistent with past literature exploring gendered career preferences (Dunlap & Barth, 2023). The observed and expected counts for males and females did not significantly differ and therefore, the null hypothesis was accepted. At this age, the expected gender differences are not being observed.

Unlike other traditionally male-dominated fields including engineering and construction, results from this study indicate that there is no gender disparity within a career in agriculture (Dunlap & Barth, 2023; Huijsmans et al., 2021). One explanation for this discrepancy from the norm is the unique geographic context of the sample used. The sample of participants for the study were exclusively from rural and regional farming communities in the Gippsland region, where both males and females are likely to have comparable local knowledge of agricultural jobs and career opportunities within the field (Brandt et al., 2017). This indicates that exposure to agriculture plays a role in shaping career aspirations in students (Brandt et al., 2017; Binks et al., 2018).

It is also important to consider broader national trends. In Australia, approximately 60% of students enrolled in agriculture-related degrees are women (Department of Industry, Science and Resources, 2024). This indicates that existing stereotypes about agriculture being a male-dominated field, particularly in production-related roles, are not barriers to female participation at a tertiary level or secondary school level, as findings from this study suggest.

Parental Occupation

The third hypothesis was that students with parents working in agriculture-related occupations would be more likely to seek a career in agriculture. However, the findings of this study indicate that there is no link between parental occupation and likelihood of seeking a career in agriculture. The observed and expected counts for no parent in agriculture and at least one parent in agriculture did not significantly differ and therefore, the null hypothesis was accepted.

These results are not consistent with the literature, which indicates that direct exposure to the agricultural industry through parental involvement plays a critical role in driving initial curiosity and enthusiasm for careers in this field (Abdul Rahaman et al., 2023). This may be due to other impacting factors including broader perceptions of agriculture, access to education and opportunities, peer influence and exposure through school programs contributing to shaping students' career ambitions (Whitehead & Estep, 2016). These findings highlight the importance of considering these multiple influences when designing intervention programs to increase overall interest in agricultural-related jobs (Noack et al, 2010). Additionally, for this variable, many students chose not to disclose parental occupation in their responses. The final sample size for this participant test was 171 students, below the power analysis recommended size of 222, which means that this test was potentially underpowered.

Role Models

The fourth hypothesis was that students with access to career role models in agriculture would be more likely to express interest in pursuing a career in agriculture. Results supported this hypothesis, with findings indicating that career role models were statistically significant predictors of students seeking a career in agriculture. This demonstrates that knowing someone who works in the agriculture industry, be that a family member, friend or family friend, can positively influence students' interest in agriculture-related careers (Olsson & Martiny, 2018). This highlights the importance of social exposure through one's social network.

It would be particularly interesting to examine the gender of these career role models and understand how this affects students' career aspirations, especially among female students (Olsson & Martiny, 2018). Due to the historical underrepresentation of women in agriculture, identifying whether female students relate more to female role models in the field may be able to provide valuable insights into these motivations (Kricorian et al., 2020). The findings of these studies could inform strategies to encourage gender diversity within agricultural careers by providing relatable role models (Olsson & Martiny, 2018). Through the exploration of the interplay between gender and role models, researchers could understand how targeted mentorship influence career decisions within this context.

Theoretical Implications

Results from this study indicate that no matter one's gender or parental occupation, with a positive career role model, one can be influenced into developing a genuine interest in agriculture. This will assist in developing targeted interventions to promote more student interest in the agriculture sector (Kricorian et al., 2020). Examining how the different factors interact is crucial to determine how to boost self-efficacy, persuasion and outcome expectations. The implications of this research link to vocational psychology and how one can use career development theories to improve career interventions and inform policies surrounding issues in career development (McIlveen, 2015). Implications of this research also relate to Social Cognitive Career Theory and demonstrate how various factors including perception, gender and social influence impact an individual's self-efficacy and their willingness to pursue certain careers (Lent & Brown, 2019).

Practical Implications

While there was no direct relationship between gender and career aspirations, there were gender differences in how perceptions of agriculture could predict career interest. Theoretical influences for using Social Cognitive Career Theory include the importance of self-efficacy beyond outcome expectations (Conklin et al., 2013). The presence of a role model was a predictor of career interest, and this may indicate that role models provide vicarious learning experiences and offer persuasion that encourages students to feel they could do something they are good at and interested in within agriculture (Kricorian et al., 2020). Results from this study indicate that it is more than career information or information about how important agriculture is. It is evident that students need exposure and experiences to supercharge their self-efficacy (Sheu et al., 2018).

Limitations and Future Research

The study has limitations due to the localised nature of the sample of students being from rural and regional towns. This research could be generalised to other rural communities, but not to all of Australia. This is a limitation due to most of Australia's population residing in metropolitan areas (Binks et al., 2018). The findings of this study challenge the existing standards for women in urban populations, where exposure to agriculture may be limited (Brandt et al., 2017). It is important to note that this was a cross-sectional study, meaning that data was collected at a single time point, which prevents an analysis of how the relationship between gender and

agricultural career aspirations might evolve over time. Future longitudinal research could provide deeper insights into how societal and cultural shifts influence these dynamics (Zaremohzzabieh et al., 2022).

Another limitation was the exclusion of diverse gender identities by only considering male and female genders. There were 16 participants who identified as being non-binary and 13 participants who preferred not to say their gender, and it would not have been appropriate to include them in the results due to the discrepancy in size between the groups.

There were several methodological limitations of the current research. Doing repeated testing of the same sample can increase the risk of a type 1 error, so a Bonferroni correction was applied. The impact of this, however, was that the sample size was potentially not sufficient to find the statistical impacts that were expected.

It was expected that there would be a relationship between parental occupation and agricultural career interest. However, due to participants non-response, the sample utilised fell short of that needed for sufficient power ($n = 222$). While there were observed practical differences, this was not statistically significant at the p value that was set. Furthermore, the power analysis found that the minimum power needed was 222, however, the gender and parental occupation sample was 194, which indicates that the non-significant results obtained may have been due to insufficient power for this test.

Future research could use an experimental design to examine the impact of gender-specific role models, where female students could be provided with the opportunity to interact with female role models working in their desired career. This would allow researchers to understand the impact of relating with one's role model from a gender perspective (Olsson & Martiny, 2018). Given the diverse nature of jobs in agriculture, future research should also aim to capture role models jobs and explore if the type of role has an impact on career aspirations. While the current research excluded non-binary students from the analysis, future research should investigate non-binary student's aspirations in agriculture. Future studies may also benefit from building a talent pool in metropolitan areas to examine whether findings from this population differ due to early exposure to the agriculture fields based on proximity (Brandt et al., 2017).

Conclusion

To have high job satisfaction, students should be interested in their career. To support the growth of Australia's agricultural industry, society should explore ways to increase students' interest in agricultural-related jobs. The Gippsland region is especially in need of growing the agriculture industry due to the increased need for food production and the importance of economic development. Findings from this study indicate that perceptions make a significant impact on career choice and there are no significant differences between genders or parental occupation when it relates to the likelihood of choosing a career in agriculture. Findings also indicate that social exposure to a career through role models has a direct and positive impact on career interest within the agricultural space. Future career development and education activities can be strengthened using agricultural role models.

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Appendix

Table A1: Frequency Counts for Perceptions of Agriculture for the 5 Point Likert Scale (n= 495)

Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Missing
1. I could do something I am interested in and good at in agriculture (n= 435)	41	68	158	117	51	82
2. Agriculture is important to the future of the world (n = 312)	2	3	40	119	148	205
3. I could earn good money in agriculture (n = 437)	15	20	143	199	60	80
4. I can make a difference to the future of the world in agriculture (n = 440)	24	64	177	135	40	77
5. Agriculture is interesting to me (n = 446)	32	64	162	108	80	71
6. I am interested in pursuing a career in agriculture (n = 437)	74	96	153	90	24	80



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