Job preferences of agricultural students in Germany – A choice-based conjoint analysis for both genders

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Abstract

Knowledge of the job preferences of agricultural students is essential for the competitiveness of the industry. Yet no study is available in Germany. Other studies mostly used direct questions for the preference measurement, which raises possible concerns about a socially desirable response bias. For this reason, the present study combines a quasi-experiment (choice-based conjoint analysis) and direct questions (Likert scales) to measure the job preferences of 568 agricultural students in Germany and compares the results. In addition to finding gender differences, the study found that 'income' and 'future perspective' are the most important job characteristics for the job choice of agricultural students, and that they also prefer an increasing 'work-life-balance' as well as a 'rural location' for their future employer. Insights about job characteristics' attractiveness lead to a more transparent environment in which employers and (potential) employees make better-informed decisions, resulting in increased job satisfaction, performance and career sustainability.

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1. Introduction

Each year over 9,000 new agricultural graduates enter the German job market (Dudek *et al.,* 2015: 32). Upon graduation, these new agricultural professionals choose positions based on their skills and experience, goals, position availability, and job characteristic preferences (e.g. 'opportunity for advancement', 'location', 'work-life-balance', 'salary'). Both employers and (potential) employees can benefit from job preference studies. Insights about job characteristics' attractiveness as well as accurate information about applicants' characteristics being available to employers leads to a more transparent situation in which candidates and employers can make better-informed decisions, resulting in increased job satisfaction, performance and career sustainability. The present study seeks to identify job characteristics influencing job attractiveness and choice among students of agricultural science in Germany. To the best of the author's knowledge there is no study available which evaluates the job preferences of agricultural students in Germany. Even in the US, most studies use primary sources which are around 20 years old (Cheney, 2000; McGraw *et al.*, 2012; Schneider, 1985). Much of the existing information on agricultural students' and professionals' job preferences in the US was obtained from topics addressed in salary studies (Barkley *et al.*, 1999; Broder and Deprey, 1985; Popp *et al.*, 2010). Other existing studies have examined working agricultural professionals (Marchant and Zepeda, 1995; Thilmany, 2000), but analyses have been descriptive as opposed to modeling choice behavior (McGraw *et al.*, 2012). Furthermore, many studies of agricultural economics professionals in the US have analyzed respondents from the academic field with a focus on the relationship between gender and salary (Arbaiya, 2008; Thilmany, 2000). Although Hine and Cheney (2000) analyzed job preferences of agricultural economics professionals and examined gender and ethnic differences in preferences, no factors influencing the job choice were presented. Therefore, the current study seeks to address gaps in knowledge about job preferences among agricultural students in Germany.

The study is novel for two reasons. First, it quantifies job preferences by using a choice-based conjoint analysis (CBCA) in a quasi-experiment, which reduces the effect of socially desirable responses, which might occur when using stated preferences alone (Meyerding, 2016c); it compares the results of the CBCA with the results of a measurement with Likert scales (stated preference approach). Second, it focuses on agricultural students in Germany, where no comparative study is available, and compares the results by gender, which previous German studies have not done (Lehberger and Hirschauer, 2016). In Germany, the results of the present study are of particular interest, since there is a shortage of skilled labor in the agricultural sector due to demographic changes (Meyerding, 2016a,b). Additionally, the present study builds on the existing foundation of literature on job choice, job preferences, and the relationship between occupation and gender. The results of the study provide employers with information on how to attract applicants who match well with respective work and company cultures and are likely to become satisfied and productive employees (Meyerding, 2015, 2016d). Prospective applicants can gain insights into personal choice decisions based on their own subjective preferences and goals (McGraw *et al.*, 2012).

1.1 Previous job preference studies

Beginning in the 1970s, early job preference studies in agriculture have mainly focused on the US, and have become more abundant over the last two decades. Past studies tended to examine samples from a specific profession or academic major, including agricultural economists (Hine and Cheney, 2000), agricultural college graduates (Barkley *et al.*, 1999), farm operators (Stallmann and Nelson, 1995), academic sports management faculty (Mahony *et al.*, 2006), accounting students (Bundy and Norris, 2011; Omar *et al.*, 2015; Trump *et al.*, 1970), and education PHD students (University of Iowa, 2011). In the majority of studies, the participants were college students making or simulating an initial professional position decision (Bundy and Norris, 2011; Butler *et al.*, 2000; University of Iowa, 2011). Other research has investigated factors that have influenced current working professionals' decision to take up their current positions (Hine and Cheney, 2000; Mahony *et al.*, 2006; McGraw *et al.*, 2012; Stallmann and Nelson, 1995). One recent German study evaluated the job preferences of horticultural students as well as vocational scholars and master craftsmen in horticulture (Meyerding, 2016d). Another study evaluated the job preferences of employees of horticultural

companies in Germany (Meyerding, 2015). However these two available studies for Germany only focused on the horticulture subsector, which might be not transferable to agriculture as a whole (Meyerding, 2016e).

1.2 Review of methodologies in previous studies

Most job preference studies have relied on surveys to collect the necessary data. The response rate of the present study (32%) is comparable to those of past studies (e.g. 27%) (Barkley, *et al.,* 1999), 55% (Hine and Cheney, 2000), and 68% (Bundy and Norris, 2011)). Most of the reviewed study results have been descriptive rather than analytic (McGraw *et al.*, 2012). The University of Iowa (2011), Hine and Cheney (2000), and Trump *et al.* (1970) used survey instruments and reported preference rankings and/or descriptive statistic results. A few studies have also reported analytical results. Bundy and Norris (2011) had participants rate their preferences on Likert scales and conducted a chi-square analysis. In addition to descriptive analyses, Mahony (2006) also conducted a multiple regression analysis of factors associated with 'participants' willingness to leave their current job'. A probit model estimating the probability of off-farm employment for farm operators was used by Stallman and Nelson (1995); however, they collected only demographic and human capital data and not the participants' preferences. Barkley, Stock, and Sylvius (1999) published multiple regression models for starting and current salaries of agriculture college graduates. In addition, possible factors affecting their job choice were identified from independent job preference variables. Butler *et al.* (2000) identified the most important job characteristics for accounting students by comparing their self-reported job preferences with human resources experts' opinions of students' preferences. McGraw *et al.* (2012) evaluated determinants that affect agricultural economics professionals' job choice between government and academic positions using a binominal probit model. Also the studies in German horticulture, identifying the job characteristics preferences of students and vocational and master craftsmen scholars, as well as employees (Meyerding, 2015, 2016d,e), used direct questions and mainly reported descriptive statistics. All reviewed studies used direct questions for measuring preferences. These studies therefore might contain social desirability biases (Meyerding, 2016c). Social desirability is the tendency to answer questions in a way that the participant believes is desired by society or the interviewer. Consequently the answers to direct questions sometimes do not reflect actual behavior when the participant is not observed. For this reason, in addition to direct questions, the present study used a choice-experiment using CBCA to quantify the part-worth utilities of the job characteristics under investigation.

1.3 Studies sampling students

In other studies, four types of job characteristics that are important to students have been identified: 'advancement opportunities', 'compensation' (including not only salary, but also 'health benefits' and 'future earning potential'), 'job security', and 'work environment' (including social as well as professional relationships with others at the workplace) (Bundy and Norris, 2011; Butler *et al.*, 2000; McGraw *et al.*, 2012; Trump *et al.*, 1970; University of Iowa, 2011). Although Bundy and Norris (2011) found that 'starting salary' was not a highly important factor in job choice, 'compensation', broadly defined, was an important characteristic. Although accounting students ranked 'salary' only 22nd out of 35 characteristics, 'job security', 'health benefits', and 'expected future income' were first, forth, and ninth, respectively. Other studies with student samples have probably underestimated the influence of long-term 'compensation' as a result of the ambiguous nature of the response options of 'salary' or 'compensation'. These two response possibilities may have been interpreted as 'starting salary', but for students or recent graduates, potential or expected 'future compensation/salary' is possibly a better indicator of the importance of 'compensation' or 'salary' for their job choice (McGraw *et al.*, 2012). Future 'compensation' and/or 'salary' might also be only one aspect of the broader job characteristic 'future prospects', which was highly ranked by the sample of horticultural students in Germany (Meyerding, 2016d,e), vocational and master craftsmen (Meyerding, 2016d) as well as employees of horticultural companies (Meyerding, 2016e). 'Good future prospects' include not only the 'salary', but also other kinds of career development, which could include taking another role such as teaching or leadership activities. It is defined as development in the direction of the individual's goals (Meyerding, 2016d). The job characteristic 'good future prospects' has been found to be the most influential

for job satisfaction in German horticulture for different subgroups (Meyerding, 2015, 2016d,e). The most important job characteristics in a study identifying job preferences of horticultural students in Germany were, in descending order: 'fair treatment of employees', 'work-home conflict', 'emotional dissonance', 'considerate supervisor', and 'supportive supervisor' (Meyerding, 2016d).

1.4 Studies sampling working professionals

For employees, the three most important types of attributes have been job 'location', 'working environment' (including social and professional relationships at the workplace), and 'compensation' (including salary and health benefits) (Barkley *et al.*, 1999; Hine and Cheney, 2000; Mahony *et al.*, 2006; McGraw *et al.*, 2012). The major difference among current working employees and students is the relative importance of 'future advancement opportunities' to students and of 'job location' to employees (McGraw *et al.*, 2012). In a study by Barkley *et al.* (1999), job characteristics preferences measured for initial job choice were quite similar to those for current job choice. 'Job location' and 'benefits' were ranked first and second, respectively, for both 'starting salary' and 'current salaries' of agricultural professionals who had graduated with agricultural degrees (e.g. in animal science, agribusiness, food science, natural resources) in the US (McGraw *et al.*, 2012). However, differences may exist across fields as a result of different participant preferences or survey techniques. There may be a difference between results for direct and indirect questions, due to the influence of social desirability bias on the former (Meyerding, 2016c). Other differences might also occur. Barkley *et al.* (1999) did not ask about the importance of 'opportunities for advancement', but results from Mahony *et al.* (2006) indicate 'opportunities for advancement' (rank/tenure) were important to current professionals. Furthermore, for agricultural economists, 'income' was ranked only 17th out of 24 job characteristics, but 'being a good match to career objectives' was second after 'work environment' (Hine and Cheney, 2000), a concept not assumed to be relevant or not considered by other studies (Barkley *et al.*, 1999; Mahony *et al.*, 2006; McGraw *et al.*, 2012). In a recent study by Meyerding (2015, 2016e,) employees of horticultural companies in Germany preferred the job characteristic 'fair treatment of employees' the most, followed by 'new learning', 'considerate supervisor', 'skill use', and absence of 'emotional dissonance'. One limitation of Meyerding's study was that he used only direct questions for the preference measurement. As mentioned earlier the results might therefore be subject to social desirability bias.

2. Materials and methods

Job offers with seven job characteristics were used in the quasi-experiment. The current investigation involved a survey with (in the following order) 16 choice sets, to perform a CBCA and the evaluation of the importance of 28 different job characteristics (including 'salary', 'future prospects', 'image of the company', and 'work-life-balance', among others) on a Likert scale. Additionally, participants were requested to give some sociodemographic data, like their age, semester, gender, desire to run their own business, and study focus.

2.1 Description of the sample

To assess agricultural students' preferences for job characteristics, a questionnaire with 54 queries was conducted in a web-based format. The survey was spread through lectures, several e-mail lists, personal contacts and social media. The students were not compensated for contributing to this study. The study was done in November 2016 in Germany. Agricultural students from different universities participated in the survey.

In total, 568 agricultural students contributed to the investigation. As the CBCA can be executed only on comprehensive data sets, all shown results (including the Likert scale parts and sample description) are grounded on the group of 568 choice set completers. No significant variances, in terms of socio-demographic features, were found among non-completers and completers of the CBCA (16 choice sets). For the group of completers, the socio-demographic attributes and answers to the questions (regarding whether participants could 'imagine running their own business', as well as regarding their 'academic major') shown in Table 1 apply. Amongst the choice set completers, the bulk was male. The mean age of the choice set completers

Table 1. Summary statistics of the 568 choice set completers.[1]

Characteristic	All (*N*=568)		Men (*N*=326)		Women (*N*=242)		Mann-Whitney-U test *P*-value
	Mean	% 6 or 7	Mean	% 6 or 7	Mean	% 6 or 7	
Age	23.00	N/A	23.46	N/A	22.24	N/A	0.000***
Semester	5.11	N/A	5.27	N/A	4.88	N/A	0.120
Imagines running own business	4.76	47.20	5.39	62.00	3.91	27.20	0.000***
Study focus business administration	4.39	40.10	4.67	42.00	4.03	37.90	0.006***
Study focus plant science	3.21	25.90	3.53	25.90	2.78	14.00	0.000***
Study focus resource management	2.67	9.80	2.65	9.60	2.70	10.10	0.742
Study focus animal science	2.89	18.40	2.59	14.40	3.30	23.60	0.001***
Study focus agribusiness and social science	4.29	39.90	4.50	42.60	4.04	36.30	0.040**

[1] *** significant at the 0.01 level (two-tailed); ** significant at the 0.05 level (two-tailed); * significant at the 0.10 level (two-tailed).

was 23 years; male participants were about one year older than female participants. The participants came from all semesters, with no significant differences between the genders. The sample is comparable to the population of agricultural students at universities in Germany as a whole (Statistisches Bundesamt, 2016). In Table 1, the first two columns show the data for all participants. Columns three and four present the data for the male subsample, and columns five and six, the data for the female subsample. Column seven presents the *P*-value of the Mann-Whitney-U test, which indicates differences between the genders. The questions regarding 'imagining running their own business' and 'study focus' were asked using a seven point Likert scale. In every second column for each group, the percentage is given of the share of the group who answered six or seven to the different questions.

As can be seen in Table 1, 62% of the male subsample plans to run their own business in the future, whereas only 27% of the female subsample rated this question on the two highest values (strongly agree and agree). Significant differences could also be observed in the study focuses of the two sexes. The majority of men were business administration, plant science, agribusiness, or social science majors, while women were significantly more likely to be animal science majors than their male peers.

2.2 Choice-based conjoint analysis

The two usual approaches, traditional conjoint analysis (TCA) or preference-based conjoint analysis, and CBCA, can be differentiated. TCA asks (directly) about preferences for the characteristics under investigation, whereas CBCA evaluates preferences more naturalistically by monitoring an amount of choice decisions (Green and Srinivasan, 1978, 1990; Green *et al.*, 2001).

For the application of CBCA in this study, seven phases had to be completed (Meyerding, 2016c): design of the stimuli; design of the selection situation; specification of a utility model; specification of a selection model; estimation of the utilities; interpretation, implementation; and disaggregation of the utilities.

The mixture of the characteristics and their specifications presented in Table 2 finally results in 96 diverse stimuli (characteristics profiles). The characteristics used in the CBCA are those that are mentioned in a series of studies investigating job preferences (Esters, 2008; Esters and Bowen, 2005; Gore, 2006; Jones and Larke Jr, 2001; Scofield, 1994).

The first characteristic is the 'image' of the company, with a focus on sustainability and the specifications reflecting all three dimensions of sustainability (ecologic, social, and economic). The sustainability 'image' of the company is assumed to be important, especially for younger generations, when it comes to their job

Table 2. Characteristics and their specifications of jobs analyzed in the choice-based conjoint analysis.

Characteristics	Characteristic specifications
Image	No information Ecologically sustainable Socially sustainable Economically sustainable
Income	30,000 € p.a. 40,000 € p.a. 50,000 € p.a. 60,000 € p.a.
Future	No information Career opportunities in the job Stepping stone for better job
Work-life-balance	Below average Average Above average
Prestige	No information Good for the CV Employees are considered elite Good reputation with business partners
Place	Village Town City Metropolis
Working hours	Part-time 40 hours 40-50 hours More than 50 hours

preferences (Meyerding, 2016d). The second characteristic is 'income', with specifications from '30,000 € p.a.' to '60,000 € p.a.', which reflects the possible span of starting incomes for agricultural graduates in Germany and has been shown to influence job preferences and job choice in a variety of studies (McGraw *et al.*, 2012).

Another characteristic which has been shown to be especially important for job satisfaction (Meyerding, 2015) and job preference (Hine and Cheney, 2000; Mahony *et al.*, 2006) is 'future prospects', with the specifications of career 'opportunities for professional growth in the job under consideration' or that the 'job under consideration is a stepping stone for another, better job'. Other characteristics are 'work-life-balance' (Lehberger and Hirschauer, 2016; Meyerding, 2016d,e: 30-37) and 'prestige' (Jurgensen, 1978; Warr, 1990), the later with the specifications, 'good for the CV', 'employees are considered elite', and 'good reputation of the company with business partners'. One characteristic that has not been frequently investigated in job preference studies, but which is especially important for agricultural companies, is the 'place' or location of the company (Meyerding, 2016b). For example, horticultural companies in Germany named urbanization/ rural depopulation among the top causes for fundamental changes in their company in the next decade, which is one of the reasons for the labor shortage in the sector (Meyerding, 2016b). 'Working hours' are also an important characteristic that should be mentioned, because high workload is one of the distinguishing characteristics of jobs in agriculture compared to other industries in Germany (Lehberger and Hirschauer, 2016). Farmers in Germany work 1,713 hours a year, making them the group with the greatest working time (industry/production 1,400 hours, construction 1,517 hours; Deutscher Bauernverband e.V., 2013). The

number of 'working hours' is also assumed to have an important impact on job preferences of agricultural students (Esters and Bowen, 2005; Meyerding, 2016d; Scofield, 1994).

The selection (phase two) was done by generating an orthogonal reduced factorial design (using SPSS (IBM, Armonk, NY, USA), orthoplan), which lead to 32 cards. To construct the final choice design, the factorial design (after shifting – cyclic variation with three alternatives) was imported into SPSS and the 32 choice sets were generated using the plancards function. One of these choice sets is presented in Figure 1.

Because evaluating 32 choice sets would have been too demanding for the participants, each participant needed to answer only 16 choice sets. Every time the questionnaire was started, a random variable was initiated with the value 0 or 1. If the random variable was 0 the participant saw the first 16 choice sets and if the random variable was 1, the participant saw the last 16 choice sets. After a welcome message, the student was requested to do a quasi-experiment (16 choice sets), where the participant had to select one out of three different jobs (stimuli) or select the none option (Figure 1).

In the third phase (design of a utility model), the part-worth model was chosen since the characteristics 'image', 'future', 'work-life-balance', 'prestige', 'place', and 'working hours' have different relevance for every participant which cannot be projected. As in the CBCA, selections done by participants were monitored. Additionally to the utility model, a choice model was required (phase four). This was to define and explain the decision-making procedure of an individual. As is common for the CBCA, the multidimensional logit choice model was used. In the logit model the choice likelihood is defined only by the variances of the utilities. The estimation of the utilities (phase five) was complete by maximizing a log-likelihood function to estimate the parameters of a probability function for resolving non-linear minimization difficulties (Meyerding, 2016c).

Phase six was the explanation and application. The total quantity of estimated part-worth utilities and overall utility amounts are not important when using the current value model; just the differences matter. The part-worth utilities are an indicator of the utility of a characteristic specification compared to a basic category (Meyerding, 2016c).

Afterwards the survey was conducted; part-worth utilities were estimated due a Cox regression. To prepare the survey data for the Cox regression a range of different jobs had to be completed (Backhaus *et al.*, 2015: 227). In this process, a structure with the identical model is implemented for the logit choice model, which maximizes the identical likelihood function of the layered Cox regression, as it arises also in the CBCA (Meyerding, 2016c).

Figure 1. One of the different 32 choice sets.

The part-worth utilities of all characteristics specifications were estimated for three groups: (1) all participants; (2) male subsample; and (3) female subsample. For the group of all participants, the value for the likelihood ratio statistic, which is chi-square distributed, is 129,768.694 (df (20)). The image 'no information', the income '30,000 € p.a.', the future 'no information', the work-life-balance 'average', the prestige 'no information', the place 'village', and the working hours 'part-time' were selected as the base specifications in the Cox regression to estimate the part-worth utilities in the CBCA. Their part-worth utilities were consequently set to zero. Based on these basis specifications the utilities of the additional characteristic specifications can be understood. With a P-value of 0.00 the present model is highly significant for the group of all participants. Each part-worth utility is also highly significant ($P<0.01$), except for '40 hours' (characteristic working hours) with $P=0.94$.

For the group of male participants, the value for the likelihood ratio statistic, which is chi-square distributed, is 65,353.658 (df (20)). The same characteristics specifications as for the group of all participants were selected as the basic specification in the Cox regression. With a P-value of 0.00, the present model is also highly significant for the male subsample. Most part-worth utilities are also highly significant ($P<0.01$), except for 'ecologically sustainable' ($P=0.04$), 'employees are considered elite' ($P=0.02$), 'city' ($P=0.62$), '40 hours' ($P=0.73$) and '40-50 hours' ($P=0.21$).

For the female subsample, the value for the likelihood ratio statistic is 46,536.043 (df (20)). Again the same characteristics specifications as for the other groups were selected as the basic specifications. With a P-value of 0.00, the present model is again significant for the female subsample. The majority of part-worth utilities are significant ($P<0.01$). However, some part-worth utilities show lower P-values or are not significant: 'ecological sustainability' ($P=0.50$), 'socially sustainability' ($P=0.06$), 'economic sustainability' ($P=0.27$), 'employees are considered elite' ($P=0.86$), 'good reputation with business partners' ($P=0.22$), 'town' ($P=0.14$), 'city' ($P=0.69$), and '40 working hours' ($P=0.24$).

2.3 Assessment of job preferences using Likert scales

The most frequently used method to evaluate the preferences for job characteristics is using Likert scales (Esters and Bowen, 2005; Jurgensen, 1978; McGraw *et al.*, 2012; Meyerding, 2015, 2016d,e). A variation of characteristics, together with characteristics also included in the choice-based-conjoint analysis, had to be rated on a scale, with six options ranging from unimportant to essential. As earlier stated, the characteristics to be rated using Likert scales contain similar ones to those included in the CBCA. These are images which focus on sustainability – but not differentiated into the three dimensions – 'income', 'future prospects', and 'work-life-balance' (work-home conflict). The characteristics 'prestige', 'place', and 'working hours' are not used as questions for the Likert scale ratings. The differences between the items used for the two methods are because the Likert scale part was initially done to complement the quasi-experiment and not to compare the results of the different methods. The 28 job characteristics used for the preference measurement using Likert scales are based on the vitamin model by Warr (2007), which was developed for the measurement of job satisfaction and was also tested and used in recent studies by Meyerding (2015, 2016d) in German horticulture. Some of these characteristics were also found to be important in studies among agricultural students in the US (Esters, 2008; Esters and Bowen, 2005; McGraw *et al.*, 2012; Scofield, 1994). The Mann-Whitney-U test was used to identify differences between the means of different subgroups.

3. Results

In this section, the results for the conjoint analysis for all groups are presented first, followed by the results for the Likert scale.

3.1 Part-worth utilities of job characteristic specifications as a result of the choice based conjoint analysis for the group of all participants

The resulting part-worth utilities for the group of all participants are presented in Figure 2.

The highest income has the highest part-worth utility, 1.76, followed by the second highest income ('50,000 € p.a.') with 1.20. After the income, the future perspective 'stepping stone' earns the third highest part-worth utility (0.80), followed by the future perspective 'career opportunities in the job' (0.76) and the prestige attributes 'employees are considered elite' (0.23) and 'good for CV' (0.23). Only after income, future, working hours, place, work-life-balance, and prestige, an attribute of image show a part-worth utility of 0.13. As stated before, just the variances are important, which means the part-worth utilities need to be understood compared to the basic specification. That also means that the place attribute 'village' yields a part-worth utility of 0.52 compared to the attribute 'metropolis', and is therefore more important than prestige. The same applies to the working-hours attributes 'part-time' and '40 hours' compared to the attribute 'more than 50 hours'.

From four image attributes, the study participants prefer 'social' and 'economic sustainability' (both 0.13), but the part-worth utilities are very low compared to the other characteristics. Not surprisingly, the participants prefer the highest income of '60,000 € p.a.'. When it comes to future prospects, 'stepping stone for a better job' is ranked highest, followed by 'career opportunities in the job'. In terms of work-life-balance, 'above average' is preferred (0.12), but the attribute 'below average' has an impressive negative part-worth utility of -0.43. For prestige, the part-worth utilities for the positive attributes differ little, but are higher than those of the characteristic image. Surprisingly, the place attribute 'village' is preferred by the agricultural students. For the characteristic working hours, the attribute '40 hours' is preferred, working 'part-time' does not show a higher utility, '40-50 hours' show a negative part-worth utility of -0.20, and working 'more than 50 hours' increases the negative impact to -0.60 compared to 'part-time' or '40 hours'.
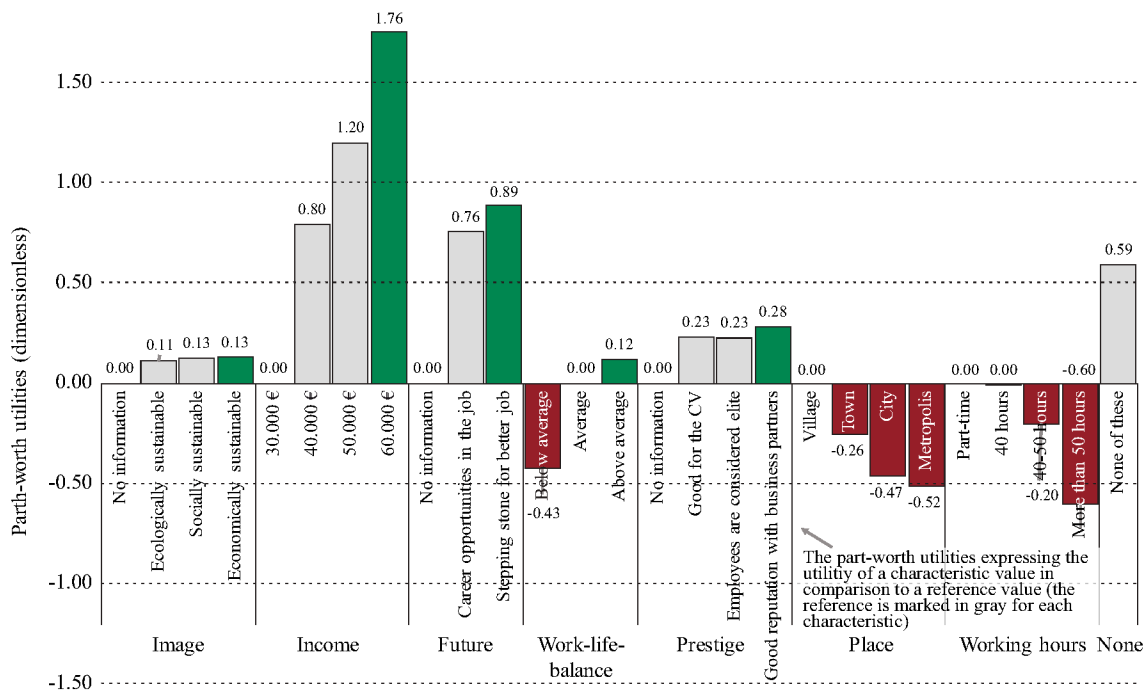

Figure 2. Results of the choice-based conjoint analysis for the group of all participants (*N*=594). Characteristics' importance from left to right: 2.75, 37.21, 18.82, 11.63, 5.92, 10.99 and 12.68%.

3.2 Part-worth utilities of job characteristic specifications as a result of the choice-based conjoint analysis for the male subgroup

The part-worth utilities for the male subgroup are presented in Figure 3. The highest income again has the highest part-worth utility, 0.93, followed by the second highest income ('50,000 € p.a.') with 0.61. After income, the future perspective 'stepping stone for a better job' earns the third highest part-worth utility (0.47), followed by the work-life-balance attribute 'above average' (0.12), the prestige attribute 'good for the CV' (0.35), and the image 'socially sustainable' (0.33).

For the characteristic image, the specification 'socially sustainable' (0.33) shows the highest part-worth utility, which is about twice that of 'economically sustainable.' Unsurprisingly, the male participants prefer the highest income. When it comes to future prospects, 'stepping stone for a better job' (0.47) is again ranked the highest. In terms of work-life-balance, 'above average' is preferred (0.37), but 'below average' has an impressive negative part-worth utility of -0.62. For the characteristic prestige, 'good for the CV' (0.35) showed the highest part-worth utility. For the location (place) of the company the 'village' is again preferred, but this time the 'city' comes second (-0.03). For working hours, again the attributes of 'part-time' and '40 hours' are ranked the highest.

3.3 Part-worth utilities of job characteristic specifications as a result of the choice-based conjoint analysis for the female subgroup

The part-worth utilities for the female subsample are shown in Figure 4. The highest income receives again the highest part-worth utility of 0.97, followed by the second highest income with 0.63. After income, the future perspective 'career opportunities in the job' earns the third highest part-worth utility (0.54), followed by the third highest income and the future perspective attribute 'stepping stone for a better job' (0.54 and 0.50, respectively). After this come the work-life-balance attribute 'above average' (0.31) and the prestige attribute 'good for the CV'.
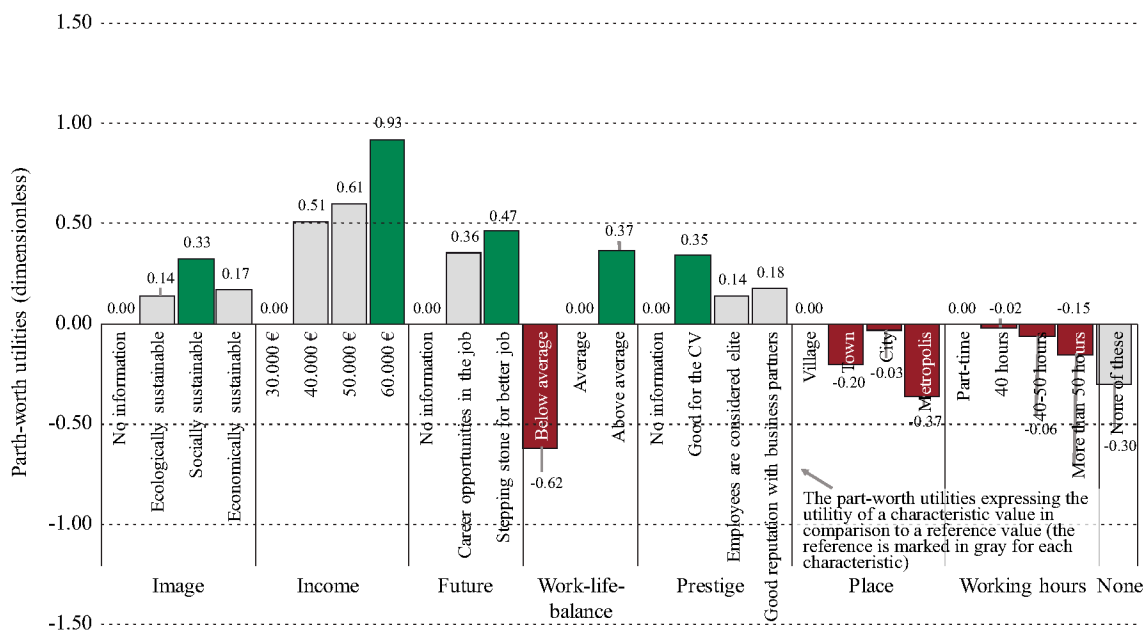

Figure 3. Results of the choice-based conjoint analysis for the male subgroup (*N*=594). Characteristics' importance from left to right: 10.19, 28.70, 14.51, 19.14, 11.42, 11.42 and 4.63%.
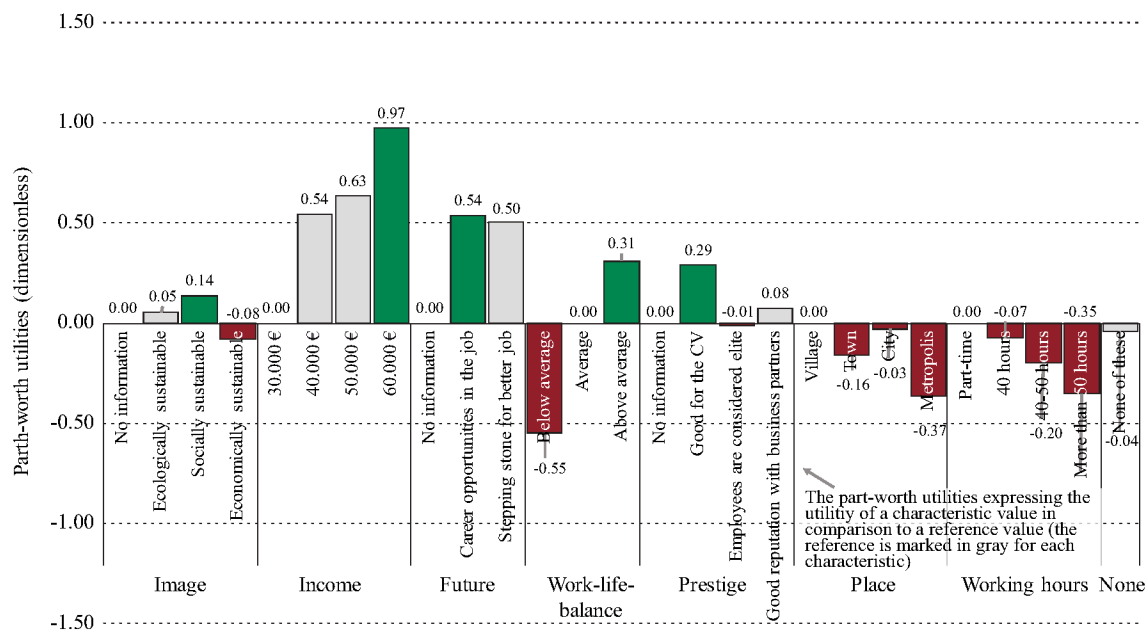
Figure 4. Results of the choice-based conjoint analysis for the female subgroup (*N*=242). Characteristics' importance from left to right: 6.67, 29.40, 16.36, 16.67, 9.09, 11.21 and 10.61%.

For the characteristic image, the specification 'socially sustainable' shows the highest part-worth utility (0.14). However 'economically sustainable' receives a negative outcome (-0.08) compared to 'no information'. Also the female subsample preferred the highest income (0.97), with a huge gap between this and the next highest income (0.63). For women, the 'career opportunities in the job' (0.54) are more important than the other future perspective 'stepping stone for a better job' (0.50). For work-life-balance, female students value the attribute 'above average' (0.31), and 'below average' shows a substantial negative utility (-0.55) compared to an average work-life-balance. For prestige, women valued 'good for the CV' (0.29) the most, and, surprisingly, the attribute 'employees are considered elite' earns a small negative part-worth utility of -0.08 compared to 'no information'. Women again preferred the 'village' as a location for their future work, followed by, with much less utility (-0.03), the 'city'. When it comes to working hours women tend to prefer 'part-time' and the drop-off of part-worth utility for more work hours is more substantial as for the other groups.

3.4 Results of the Likert scale evaluation for all three groups

The second method used to determinate job preferences of agricultural students in Germany was the traditional Likert scale (1=unimportant to 6=essential) – the most frequently used technique. Table 3 presents the results (mean values) of the assessment of the job characteristics favored by agricultural students. As mentioned above, the characteristics are based on earlier research. A brief explanation of the items can be found in the article by Meyerding (2016d). The second column shows the mean for all participants, the third for the male subsample and the fourth for the female subsample. The *P*-values of the Mann-Whitney-U test are presented in the far right column of Table 3, indicating significant differences between the subgroups. The order starts with the highest value for the group of all participants and ends with the lowest.

For all participants, the 'fair treatment of the employees' is the most important job characteristic, when using a direct question for preference measurement, followed by 'work-home-conflict', 'new learning', 'supervisor behaves considerately', and 'good future prospects'. The characteristic 'pay level' attains only a middle ranking, placed 17 out of 28, with no significant difference between the genders. This result for 'pay level' (income) differs a lot from the results of the quasi-experiment for all three groups (Figures 2-4), where the highest income received the highest part-worth utility of all attributes for all characteristics under investigation.

Table 3. Results of the Likert scale part for all three groups.[1]

Job characteristic	All	Men	Women	Mann-Whitney-U test *P*-value
Fair treatment of employees	4.89	4.60	5.23	0.000***
Work-home-conflict	4.66	4.48	4.91	0.000***
New learning	4.58	4.55	4.60	0.732
Considerate behavior of supervisors	4.51	4.30	4.74	0.000***
Good future prospects	4.47	4.54	4.44	0.124
Skill use	4.38	4.43	4.30	0.059*
Job security	4.30	4.21	4.42	0.042**
Emotional dissonance	4.23	4.12	4.34	0.061*
Adequate equipment	4.17	4.27	4.02	0.012**
Quality of social contact	4.10	4.08	4.12	0.568
Significance to self	4.09	4.15	4.02	0.131
Task discretion	4.00	4.04	3.95	0.309
Task coherence	3.98	4.06	3.87	0.121
Pleasant environment	3.96	3.78	4.19	0.000***
Organizations morality in society	3.92	3.75	4.12	0.000***
Clear role requirements	3.90	3.82	4.04	0.003***
Pay level	3.86	3.93	3.81	0.104
Availability of feedback	3.83	3.87	3.78	0.308
Supervision is supportive	3.80	3.72	3.91	0.108
Range of different tasks	3.74	3.84	3.63	0.038**
Safe work practices	3.69	3.52	3.91	0.000***
Amount of social contact	3.62	3.59	3.68	0.288
Difficulty of job demands	3.56	3.63	3.48	0.105
Value to society	3.48	3.39	3.60	0.052*
Conflict between job demands	3.42	3.26	3.64	0.000***
Future predictability	3.32	3.36	3.28	0.373
Influence over the wider orga.	3.25	3.30	3.20	0.290
Number of job demands	3.24	3.27	3.22	0.418

[1] Standard deviation between 1.0 and 1.3; *** significant at the 0.01 level (two-tailed); ** significant at the 0.05 level (two-tailed); * significant at the 0.10 level (two-tailed).

Significant differences between the results of the Likert scale evaluation of men and women could be found in the present study. For women, the characteristics 'fair treatment of employees', 'work-home-conflict', 'supervisor behave considerate', 'job security', 'emotional dissonance', 'present environment', 'organizations' morality in society', 'clear role requirements', 'safe work practices', 'value to society', and 'conflict between job demands' are more important than for men. For the male subsample, only the job characteristics 'skill use', 'adequate equipment', and 'variation of tasks' are more important than for the female subsample.

The most important job characteristics for men are 'fair treatment of employees', 'learning opportunities', 'good future prospects', 'work-home-conflict', and 'skill use'. For women the same order applies with the exception of 'work-home-conflict' and 'good future prospects', which are in third and fourth place, respectively. This indicates that men value 'good future prospects' more than 'work-home-conflict', and women prefer 'work-home-conflict' (or rather, less of that conflict) more than 'future prospects'.

4. Discussion

The results of the conjoint analysis for the group of all participants indicate that 'income' has the highest impact on job choice for agricultural students in Germany for both female and male subsamples. This result is different from the results of the direct questions about job characteristics preferences, where 'income' is ranked 17th out of 28 job characteristics. Similar results using direct questions were observed by Meyerding (2016d) for horticultural science students in Germany using the same items as in the present study. Horticultural students ranked income in 18th place out of 28 (Meyerding, 2016d). The middle place rank of 'income' when using direct questions was also observed in a series of other studies in the US, Germany, and the United Kingdom (Bundy and Norris, 2011; Butler *et al.*, 2000; Cheney, 2000; Esters and Bowen, 2005; Jones and Larke Jr, 2001; Meyerding, 2016e; Scofield, 1994; Jurgensen, 1978; Trump *et al.*, 1970). As mentioned above, this gap between the results could be due to the effect of social desirability bias. Social desirability is the trend of participants to act or reply in a way they assume society considers appropriate (Crowne and Marlowe, 1960). This effect leads to the difficulty that the possible employee states he/she prefers, for example, an employer whose business is 'ecologically sustainable', but does not show this behavior to the same extent in a real job-choice situation when not being observed (Meyerding, 2016c). The findings of research analyzing job preferences on the basis of direct questions are, then, problematic. The results of this study suggest that the use of a mixture of approaches to get an understanding of the real behaviors of job seekers and employees is very important. For examples of other approaches and a discussion of choice-experiments see Beckley *et al.* (2012).

The second most important job characteristic according to the conjoint analysis is 'future prospective', a job characteristic which is rarely mentioned by other research in this arena (McGraw *et al.*, 2012). This feature is not only important for job choice and preferences of agricultural students, but has also been found to be the most important job characteristic influencing the job satisfaction of horticultural employees (Meyerding, 2015), as well as of vocational and master craftsmen scholars in German horticulture (Meyerding, 2016d). The result of the present study suggest that employers in agriculture should pay increased attention to communicating the 'future prospects' of employees and job applicants, and try to paint a positive but realistic picture of the future. This helps increase the attractiveness of employers, as well as increasing the job satisfaction of the employees already in business. The female subsample favors the future prospect 'career opportunities in the job,' whereas the male subsample prefers the attribute 'stepping stone for a better job.' This difference can probably be interpreted as the tendency of women to focus on stability and of men to focus on development.

Another important job characteristic is 'work-life-balance', which is also named as a megatrend in the agricultural subsector horticulture (Meyerding, 2016b). A below average 'work-life-balance' seems to have a very high negative impact on job choice in agriculture for both men and women. This needs to be mentioned because work in agriculture is more time consuming than in other sectors (Lehberger and Hirschauer, 2016). The need for an improved 'work-life-balance' should lead to changing processes in the structural and procedural organization of agricultural companies, in order to be an attractive employer in the future (Meyerding, 2016a).

An unexpected result was present for the job characteristic 'location'. Agricultural companies report struggling with urbanization (Meyerding, 2016b) as one reason for their labor shortage. The results of the conjoint analysis suggest that agricultural students prefer to work in rural areas and the part-worth utilities show an inverse relation to the population size of the 'location' of the company. This result is positive for agricultural companies looking for agricultural graduates, but it is not clear if this preference is also present for other groups of potential employees of agricultural companies, so companies in rural areas might still have problems finding workers. The unexpected result might be due to self-selection in the sample of the present study. People who show a preference for rural areas might choose to study agriculture more often than others. In addition, for the overall German population the preference for urban locations is increasing (Kurz, 2004).

For 'working hours' the part-worth utilities decrease with increasing the duration. As discussed above, this job characteristic is of special importance in agriculture, as the work is more time consuming than in other industries (Lehberger and Hirschauer, 2016). One interesting result that should be mentioned is that 'part-time' showed almost the same part-worth utility as work duration of '40 hours' a week. '40 hours' seems to be the preferred duration of work a week for agricultural students in Germany. Only for the female subsample is there a slightly higher preference for 'part-time' work. This preference might be linked to a wish to reduce 'work-family-conflict' in the future. 'Part-time' work, as well as flexible working hours, significantly reduces 'work-family conflict' (Meyerding, 2015, 2016e).

Another unexpected result is the relatively low importance of the 'image' of the employer in terms of sustainability. For the group of all participants, the part-worth utilities of all three sustainability dimensions are at about the same low level compared to the attribute 'no information'. This is in line with the results of the direct measurement using a Likert scale, where 'organizations' morality in society' is ranked 15th out of 28. On the other hand, the job characteristic 'fair treatment of employees' is in first place. It is not assumed that social desirability is the reason for this gap. It is more likely that 'social sustainability' is not associated with the 'fair treatment of employees' by the study participants. In the conjoint analysis all sustainability images showed a positive part-worth utility for both women and men, with the exception that for the female subsample the attribute 'economically sustainable' showed a small negative part-worth utility compared to 'no information' (about the company's image in terms of sustainability issues). To be economically sustainable (or in other words, successful) seems to have a negative connotation for the female subsample. The reason for this is unclear. The order of sustainability issues in the result of the conjoint analysis as well as the Likert scale measurement differ to those of horticultural students in Germany, where, for example, the 'organizations' morality in society' was ranked relatively high, 10th out of 28 job characteristics (Meyerding, 2016d). Maybe agricultural and horticultural students differ in their values regarding sustainability. The high value to students of a positive sustainability image that is assumed in other studies (Meyerding, 2016d) cannot be supported with the results of the quasi-experiment in the present study. This is only true for the job characteristic 'image' and may be due to wording and to the participants' lack of knowledge.

The results of the Likert scale measurement indicate that 'fair treatment of employees', 'work-home-conflict', 'new learning', 'considerate behavior of supervisors', 'good future prospects', and 'skill utilization' are the preferred job characteristics of agricultural students in Germany. The results show that agricultural companies need to focus on these job characteristics to be an attractive employer today and in the future. The differences between the subgroups suggest that for men the job characteristics relating to work content are of special interest, whereas women focus more on the work environment.

4.1 Limitations

There are some broadly documented weaknesses of conjoint analysis in general. One case is that participants occasionally use simplification tactics to reply to challenging full-profile tasks. Respondents might consider just the most significant characteristics; this could end up in overstated differences in significance among the most and the least significant aspects. This could have led to an overestimation of the most important factor, 'income', in this study (though, allowing for such an overestimation, it nonetheless emerges as the most important job characteristic). Respondents employ more energy making real-world choices than they do making judgements in a CBCA, particularly in high-involvement decision-making situations such as can be assumed for job choice (Meyerding, 2016c).

Other explanations for the variances among the outcomes of the two approaches, beyond the possible social desirability effects already proposed as the main explanation, has to be stated. For instance, the statement words in the Likert scale portion can affect the evaluation (Meyerding, 2016c). Also, the items in the Likert scale task do not perfectly represent the concepts used as job characteristics in the conjoint analysis. For a better comparison of the two methods the items should be identical.

One more restriction for the choice-experiment was the comparatively high amount of choice sets (16), which was problematic for the study subjects and probably led to non-completers; nevertheless, the non-completers do not vary in terms of sociodemographic characteristics from the set of completers (Meyerding, 2016c).

4.2 Future research

A supplement investigation may be recommended using adaptive conjoint analysis, which is assumed to be more suitable for high-involvement tasks (Bruns, 2015) such as job choice and job characteristics' preference measurement. The items in the Likert scale part should, in a follow-up study, be identical to those in the conjoint analysis of the present study. In the present study, only two subgroups for both sexes were analyzed, and it is clear that students or employees have many other personal characteristics that influence job preferences (Warr, 2013). Conjoint analysis is restricted to only a few characteristics that can be included in the analysis. For this reason future research should also evaluate more personal characteristics, such as 'personality characteristics' or 'political views', and more job characteristics, to get a more detailed picture about the job preferences of agricultural students, by using, for example, a structural equation model. It would also be of interest to investigate the job preferences of groups other than students of agriculture.

5. Conclusions

It can be summarized that main variances exist in findings produced from direct questions, as with Likert scales, and quasi-experimental results. One potential cause for these variances in the identical sample might be the social desirability effect. Consequently findings of research examining job preferences that primarily apply direct questions may be biased to the preference for socially-valued job features. For this reason, a mixture of methods to get a knowledge of the real manners of job seekers, students, and employees is important, as demonstrated by the present study. Future research should cluster the data to create student segments that are more homogeneous and compare the preferences of these segments to draw a more detailed picture.

The results show a rather different picture of the preferences relating to the 'sustainability image' of the employer, and of the importance of 'income' for job preferences and job choice than do various investigations in this area. The outcome that 'sustainability image' and 'prestige' are associated with relatively low part-worth utilities indicates that, confronted with other, associated choices including 'income', 'future prospects', and so on, students do not see much value in such characteristics. This is different from findings reported by other studies in this field (Bundy and Norris, 2011; Hine and Cheney, 2000; Mahony, 2006; McGraw *et al.*, 2012; Meyerding, 2016d; Trump *et al.*, 1970; University of Iowa, 2011). It also implies that there is more emphasis on 'income' and 'future prospects' when choosing a job in agriculture than is claimed by activists and media figures who promote sustainability management in agriculture as a tool for attracting potential employees.

References

Arbaiya, A. 2008. Factors affecting the salary of agricultural economics professionals. Master's thesis, University of Arkansas, Fayetteville, AR, USA.

Backhaus, K., B. Erichson and R. Weiber. 2015. *Fortgeschrittene Multivariate Analysemethoden: Eine anwendungsorientierte Einführung.* [Advanced multivariate analysis methods: an application-oriented introduction.] 3. überarbeitete und aktualisierte Auflage. Springer Gabler, Berlin, Germany.

Barkley, A.P., W.A. Stock and C.K. Sylvius. 1999. Agricultural graduate earnings: the impacts of college, career, and gender. *American Journal of Agricultural Economics* 81(4): 785-800.

Beckley, J.H., D. Paredes and K. Lopetcharat. 2012. *Product innovation toolbox: a field guide to consumer understanding and research.* John Wiley and Sons, Hoboken, NJ, USA.

Broder, J.M. and R.P. Deprey. 1985. Monetary returns to bachelors and masters degrees in agricultural economics. *American Journal of Agricultural Economics* 67(3): 666-673.

Bruns, F. 2015. *Franchise-Attraktivität: eine präferenzanalytische Studie am Beispiel von Investoren im markengebundenen Vertragshandel der Automobilwirtschaft in der Volksrepublik China.* [Franchise attractiveness: a preference analysis study based on the example of investors in the traded automotive trade agreement in the people's Republic of China.] 1. Auflage. GRIN Verlag, München, Germany.

Bundy, P., and D. Norris. 2011. What accounting students consider important in the job selection process. *Journal of Applied Business Research* 8(2): 1-6.

Butler, S.A., D.E. Sanders and S.M. Whitecotton. 2000. Student and recruiter insights on the importance of job attributes. *Journal of Managerial Issues* 12(3): 337-351.

Cheney, L.M. 2000. Tracking agricultural economics professionals. *Review of Agricultural Economics* 22(1): 17-22.

Crowne, D.P. and D. Marlowe. 1960. A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology* 24(4): 349-354.

Deutscher Bauernverband e.V. 2013. *Branchenvergleich: Arbeitszeiten in der Landwirtschaft unterscheiden sich kaum noch.* [Industry comparison: working hours in agriculture are hardly different.] Available at: http://tinyurl.com/y9b9fqzn.

Dudek, K., B. Glässner and C. Tauch. 2015. Hochschulrektorenkonferenz 2015 – Statistiken zur Hochschulpolitik 1/2015. [Hochschulrektorenkonferenz 2015 – Statistics on higher education policy 1/2015.] Available at: https://tinyurl.com/ydxqzhra.

Esters, L. 2008. Influence of career exploration process behaviors on agricultural students' level of career certainty. *Journal of Agricultural Education* 49(3): 23-33.

Esters, L.T. and B.E. Bowen. 2005. Factors influencing career choices of urban agricultural education students. *Journal of Agricultural Education* 46(2): 26-35.

Gore, P.A. 2006. Computer-based career exploration: usage patterns and a typology of users. *Journal of Career Assessment* 14(4): 421-436.

Green, P.E., A.M. Krieger and Y. Wind. 2001. Thirty years of conjoint analysis: reflections and prospects. *Interfaces* 31(3): 56-73.

Green, P.E. and V. Srinivasan. 1978. Conjoint analysis in consumer research: issues and outlook. *The Journal of Consumer Research* 5(2): 103.

Green, P.E. and V. Srinivasan. 1990. Conjoint analysis in marketing: new developments with implications for research and practice. *Journal of Marketing* 54(4): 3-19.

Hine, S. and L.M. Cheney. 2000. Career choices and challenges among agricultural economists. *Review of Agricultural Economics* 22(1): 34-41.

Jones, W.A. and A. Larke Jr. 2001. Factors influencing career choice of African American and Hispanic graduates of a land-grant college of agriculture. *Journal of Agricultural Education* 42(1): 39-49.

Jurgensen, C.E. 1978. Job preferences (what makes a job good or bad)? *Journal of Applied Psychology* 63(3): 267-276.

Kurz, K. 2004. Labour market position, intergenerational transfers and home-ownership: a longitudinal analysis for west German birth cohorts. *European Sociological Review* 20(2): 141-159.

Lehberger, M. and N. Hirschauer. 2016. Recruitment problems and the shortage of junior corporate farm managers in Germany: the role of gender-specific assessments and life aspirations. *Agriculture and Human Values* 33(3): 611-624.

Mahony, D.F., M. Mondello, M.A. Hums and M. Judd. 2006. Recruiting and retaining sport management faculty: factors affecting job choice. *Journal of Sport Management* 20(3): 414-430.

Marchant, M.A. and L. Zepeda. 1995. The agricultural economics profession at the crossroads: Survey results of faculty salary, employment, and hiring prospects. *American Journal of Agricultural Economics* 77(5): 1322-1328.

McGraw, K., J.S.H. Popp, B.L. Dixon and D.J. Newton. 2012. Factors influencing job choice among agricultural economics professionals. *Journal of Agricultural and Applied Economics* 44(2): 251-265.

Meyerding, S.G.H. 2015. Job characteristics and job satisfaction: a test of Warr's vitamin model in German horticulture. *The Psychologist-Manager Journal* 18(2): 86-107.

Meyerding, S.G.H. 2016a. Organization 2020 – An empirical study of the current and future importance of organizational issues for horticultural companies and their perceived competence in Germany. *Russian Journal of Agricultural and Socio-Economic Sciences* 51(3): 58-69.

Meyerding, S.G.H. 2016b. Change management study of horticulture 2015 – Conditions and success factors. *Journal of Organisational Transformation and Social Change* 13(2): 123-146.

Meyerding, S.G.H. 2016c. Consumer preferences for food labels on tomatoes in Germany – A comparison of a quasi-experiment and two stated preference approaches. *Appetite* 103: 105-112.

Meyerding, S.G.H. 2016d. Job satisfaction and preferences regarding job characteristics of vocational and master craftsman scholars and horticulture students in Germany. *Review of Agricultural and Applied Economics* 19(1): 30-49.

Meyerding, S.G.H. 2016e. *Mitarbeiterzufriedenheit in KMU: mit einer empirischen Erhebung auf Grundlage des Vitamin-Modells und Potenzialanalyse der Mitarbeiterzufriedenheitsmessung für die soziale und ökonomische Dimension der Nachhaltigkeit am Beispiel von Gartenbauunternehmen.*[Employee satisfaction in SMEs: an empirical survey based on the vitamin model and the potential analysis of employee satisfaction measurement for the social and economic dimension of sustainability, as exemplified by horticultural companies] Berichte aus der Betriebswirtschaft. Shaker Verlag, Aachen, Germany.

Omar, M.K., A. Zakaria, S. Ismail, J.S.L. Sin and V. Selvakumar. 2015. Job selection preferences of accounting students in Malaysian private universities. *Procedia Economics and Finance* 31: 91-100.

Popp, J.S.H., D.J. Newton, D. Pittman, D.M. Danforth and A. Abdula. 2010. *Comparison of factors influencing salaries of agricultural economics professionals in academic and federal employment*. Available at: http://tinyurl.com/yage5px9.

Schneider, V.E. 1985. The market for agricultural economists: discussion. *American Journal of Agricultural Economics* 67(5): 1223.

Scofield, G.G. 1994. An Iowa study: factors affecting agriculture students career choice. *North American Colleges and Teachers of Agriculture Journal* 38(4): 28-30.

Stallmann, J.I. and J.H. Nelson. 1995. Employment history and off-farm employment of farm operators. *Journal of Agricultural and Applied Economics* 27(2): 475-487.

Statistisches Bundesamt. 2016. *Bildung und Kultur – Studierende an Hochschulen: Wintersemester 2015/2016.* [Education and culture – students at higher education: wintersemester 2015/2016.] 2016. Available at: https://tinyurl.com/ybv6fony.

Thilmany, D. 2000. Gender based differences of performance and pay among agricultural economics faculty. *Review of Agricultural Economics* 22(1): 23-33.

Trump, G.W., H.S. Hendrickson, W.L. Compfield, D.H. Chamer, T.F. Keller, S.W. Lyverse, H.J. Mottice, J.M. Saada, W.P. Tenney, M.F. Usry and T.H. Williams. 1970. Job selection preferences of accounting students. *Journal of Accountancy* (129): 84-86.

University of Iowa. 2011. College of Education. *Factors influencing job choice: 2010-11*. Available at: https://tinyurl.com/yb4q6wrt.

Warr, P. 1990. Decision latitude, job demands, and employee well-being. *Work and Stress* 4(4): 285-294.

Warr, P. 2013. Jobs and job-holders: two sources of happiness and unhappiness. In: *The Oxford handbook of happiness*, edited by S.A. David. Oxford University Press, Oxford, UK, pp. 733-750.

Warr, P.B. 2007. *Work, happiness, and unhappiness*. Lawrence Erlbaum Associates, Mahwah, NJ, USA.