Running head

Social Science Careers

Article category

Original Manuscript

Sigrid Haunberger, Andreas Hadjar

ZHAW University of Applied Sciences, School of Social Work, Zurich, Switzerland

University of Luxembourg, Faculty of Language and Literature, Humanities, Arts and Educational Sciences (FLSHASE), Esch-sur-Alzette, Luxembourg

Correspondence information

Prof. Dr. Sigrid Haunberger (corresponding author)

ZHAW University of Applied Sciences

School of Social Work

Institute of Management and Social Policy

Pfingstweidstrasse 96, CH-8037 Zurich, Switzerland,

+41 58 934 89 59 (phone), sigrid.haunberger@zhaw.ch

Declaration of interest

Funding: Swiss State Secretariat for Education, Research and Innovation (SERI)

The authors report no declarations of interest.

ORCID iD: 0000-0002-8714-7157 (Haunberger)

ORCID iD: 0000-0002-2641-010X (Hadjar)

Title

Why are male students less likely to opt for social science courses? A theory-driven analysis

Abstract

In this paper, we discuss the question of why only a few men decide to study social science courses such as social work. While the conceptual base of our analysis includes the theory of planned behaviour (TPB) and theories centring on gender role orientations, the empirical base is a random cluster sample of high school graduates in Switzerland. Results show different gender effects, as well as direct and indirect effects, for all the TPB factors. Gender role orientations and the question of how a social science profession fits one's own gender identity appear to be of particular importance only among male students.

Keywords: theory of planned behaviour, gender-specific study choice, social sciences, social work, gender role orientations

Introduction

Few studies exist regarding gender selectivity and the mechanisms of study choice (e.g. Becker et al., 2010), while the social selectivity of access to higher education has been demonstrated frequently (Lörz et al., 2011). A detailed account of the state of research regarding occupational gender imbalances in general, and in relation to social sciences in particular, indicates ambivalent findings and a need for more research on the mechanisms. Particularly striking are the large field-specific differences in gender balance: numerically, in university admissions and degrees, men dominate all study levels in the exact sciences, in mechanical and electrical engineering, in economics and in construction and geodesy. The majority of female students are admitted to the fields of veterinary medicine, language and literature, pharmacy, social sciences and humanities. At the universities of applied sciences, male domains are the fields of architecture, construction (over 70% men in admissions and degree), technology and IT (well over 90% in admissions and degree). Significant female majorities, on the other hand, can be found in health, social work and applied psychology (Federal Statistical Office/FSO, 2011). Women dominate the field of social sciences and social work, while men are clearly underrepresented (for Switzerland, see FSO, 2011, 2017; for Germany, see Klein and Wulf-Schnabel, 2007). The clear overrepresentation of women in the field of social work can also be seen in t entries to the Bachelor's degree courses in social work at universities of applied sciences in Switzerland. Between 2006 and 2015, this rate remained quite stable, ranging from 75 to 80 per cent (Staatssekretariat für Bildung, Forschung und Innovation/SBFI, 2017: 17).

Empirical studies dealing with occupational imbalances suggest that the causes must be considered to be a complex intertwining of various influential factors at both the institutional/structural and individual/subjective levels (Buchmann and Kriesi, 2009). For social work, gender has been found to play a significant role in how the profession is regarded and talked about (Khunou et al., 2012). Gender images of professions are also crucial factors behind the low number of men becoming primary school teachers (Bieri-Buschor et al., 2014) or healthcare professionals (Schwiter et al., 2014).

When it comes to explaining gender-(a)typical career choices, it is predominantly women (often in connection with the so-called STEM subjects—science, technology, engineering and mathematics) who have been the centre of interest (Riegle-Crumb et al., 2012; Solga and Pfahl, 2009; Stöger et al., 2012), and more rarely the career choices of men (for the Anglo-Saxon area, see Charles and Bradley, 2009; Frome et al., 2006; Watt, 2008). The question of why men do not become primary school teachers (Bieri-Buschor et al., 2014) or why male healthcare professionals are still uncommon (Schwiter et al., 2014) has recently been investigated. Schwiter et al. (2014)

reveal that gender-atypical career paths are rather rare in Switzerland; the reasons given by the authors are gendered patterns of perception and the thinking and actions of adolescents, who do not even consider entering gender-atypical occupational fields.

The results of Buchmann and Kriesi's work (2012) indicate that gender-stereotyped ideas affect parental attributes, triggering the process of steering towards gender-appropriate professional training and corresponding self-selection processes. Further results point to the importance of parental role models or other role models in children's career choices (Khunou et al., 2012; Makarova and Herzog, 2014). Results from Lörz (2012) indicate that mechanisms for status reproduction are crucial for the general decision to study, while the choice of field of study is more strongly determined by the cultural background of the respondents. On the other hand, the results of the analysis by Georg (2005) point to class-invariant interest and preference structures that may emerge during school socialisation.

We know much less about career choices in social sciences, particularly with regard to social work (Christie and Campling, 2001; Khunou et al., 2012). Depending on the department, the significance of motives differs. The motive of interest (interest in subject, study subject corresponds to talent, improvement of society, to realise career aspirations, to broaden horizons) is significant for students in humanities and social sciences departments at universities, as well as for social work and applied psychology students at universities of applied sciences. Compared to other departments, the motives of labour market and income (improve income opportunities, have good labour market opportunities, higher social standing, diversity of career opportunities, advanced education after vocational training) are less important. Even family tradition is less important; for financial motives (employment is possible in addition to studies, keeping study costs as low as possible), students of humanities and social sciences as well as of social work and applied psychology show average scores (FSO, 2017).

To put it briefly, empirical evidence from other qualitative and quantitative research projects suggests the following favourable and unfavourable factors in respect of men deciding whether to study social work. Among the factors favouring men are biographical factors such as one's own experience of critical life events in the form of addiction or experience of crisis and life trajectories (Graf et al., 2015; Labra et al., 2018; Rompf and Royse, 1994) and one's own personal environment (family, friends, relatives) in the form of contact with social workers (Dennison et al., 2007; Graf et al., 2015; Warde, 2009). In addition, the desire to work with clients and belong to a profession (Christie and Kruk, 1998) and the desire to give something back to society and altruism (Csikai and Rozensky, 1997; Warde, 2009) have a positive effect.

Unfavourable factors include a lack of (concrete) professional knowledge, a negative image attributed to the profession, general information deficit, and a lack of ability to differentiate between similar occupations in the social sector (Budde et al., 2009a, 2009b; Jones et al., 2006). Doubts about one's own abilities, the workload, the responsibility and too much bureaucracy reduce the motivation to pursue a career in social work (Christie and Kruk, 1998). Furthermore, social work and its unclear professional profile is mentioned as a reason for not becoming a social worker (Knill, 2012), in addition to the historical role of gender in the helping professions and the lack of emotional empathy in men (Labra et al., 2017).

Educational policy measures directed towards bringing more women into male-labelled science and technological occupations and men into female-labelled occupations in care and education have often turned out to be only marginally successful, or at least less influential than expected (European Commission's Expert Group on Gender and Employment/EGGE, 2009; for Switzerland, see Schwiter et al., 2014). Empirical evidence suggests that gender inequalities—and particularly occupational gender imbalances, resulting from non-egalitarian gender stereotypes relating to women being perceived as better carers and expressed in a higher likelihood of women entering professions such as nursing and social work than men—appear to be extremely persistent (EGGE, 2009; for Switzerland, see FSO, 2011).

Accordingly, gender differences in occupational and study choices also appear to be quite constant (Aeschlimann et al., 2015; Hadjar and Aeschlimann, 2015; Leemann and Keck, 2005). Thus, the problem of occupational gender imbalance deserves an in-depth analysis with a special focus on the mechanisms behind the persistence of this phenomenon (Leuze and Strauß, 2016; Makarova and Herzog, 2013; Schwiter et al., 2014).

While much emphasis has been put on the social issue of occupational imbalance, our study also relates to conceptual issues. Our conceptual lens relates to the theory of planned behaviour (TPB) (Ajzen, 2002). Thus, we emphasise attitudes, subjective norms and perceived behavioural control (in terms of limitations) concerning the intention to study in the social sector. A second important concept relates to gender role orientations (e.g. Somech and Drach-Zahavy, 2016) as a key issue regarding gender differences in occupational choices or in the choice of field of study.

In the light of the outlined research issues and the state of research, the main objective of our enquiry is to address why only a few men decide to study a social science subject such as social work. We focus on the case of Switzerland with its heterogeneous canton-specific education systems, as the constitution of Switzerland transfers responsibility for the school system mainly to the level of the cantons. The Swiss education system is characterised by a 'dual system' splitting academic and vocational training in the higher education system (Wettstein and Gonon, 2009).

In the next section, we present a theoretical framework for the explanation of study choice as a special case of occupational choice. Conceptual approaches to gendered occupational choices and, as indicated, the TPB are applied to the research issue to derive the research hypotheses. The method section includes information on the Swiss data on which the research is based, the measuring instruments (operationalisation) and the data analysis strategy, centring on the structural equation modelling approach (SEM) and the analysis package Mplus (Muthén and Muthén, 2017). After presenting the results in detail, they are summarised in the final section, accompanied by a discussion and limitations section, as well as an outline of possible strategies to reduce gender inequalities in study programmes at the tertiary level.

Theoretical framework

The theory of planned behaviour and related state of research

Although this rational theory is not often used to analyse study choices (e.g. the study of on career choice intentions by Cano et al., 2016), Ajzen's (2002) TPB provides a foundation for analysing the links among attitudes towards study programmes and professions, the intention to study in a certain programme, and behavioural outcomes. However, the focus of the TPB is on the predictors of behavioural intentions. The intention to perform a certain action is determined by attitudes towards a certain behaviour (e.g. studying a certain subject) based on: behavioural beliefs regarding expected and desired outcomes, as well as other utilities (e.g. perceiving a certain study subject as stimulating or easy to study); subjective norms, based on normative beliefs related to perceived social normative pressures and perceived beliefs of relevant others such as parents, peers, teachers or the 'average person'; and perceived behavioural control, based on control beliefs regarding the extent to which a person feels (internally) capable of performing a certain action and is (externally) hindered from carrying out a certain action (see Figure 1).

****Insert Figure 1 about here****

There have always been attempts to add factors to the TPB that have genuine effects on behavioural intention or behaviour beyond the TPB factors outlined so far. These include past behaviour and identity (Arnold et al., 2006). Past behaviour indicates certain habits that are automatically applied to a situation and thus directly impact behaviour (Aarts and Dijksterhuis, 2000). These habits mean lower costs. Sense of identity also appears as a kind of frame that structures behavioural options and again prioritises options that fit the identity (Smith et al., 2008).

In our study, we included the subject profile selected by the students in upper secondary education in terms of past behaviour and as an identity-forming mechanism.

The TPB has already been applied to study choice and career choice, as well as related phenomena (Cano et al., 2016). The state of research appears to be highly inconclusive in regard to specific operationalisations, outcome variables (ranging from intentions to seek information and job search to intentions for specific career paths), and techniques of data analysis (ranging from simple bivariate correlations and regression models to SEM) as possible reasons behind the different findings. The TPB factors have also proved to be of varying importance (Arnold et al., 2006; Kim-Soon et al., 2016; Millar and Shevlin, 2003; Presley et al., 2010; Sutter and Paulson, 2016; Taylor, 2015).

The state of research in regard to gender and the TPB factors relating to study or career choice is even more inconclusive. Gendered career choices have been analysed by Giles and Larmour (2000: 2141), who focus on the intention to apply for promotion, emphasising the TPB factor of perceived behavioural control, as the authors assume major differences between male and female employees in self-efficacy as an internal facet of control. Evers and Sieverding (2015) analysed gender differences in academic career intentions. Their results reveal a lower intention among women to pursue an academic career.

Gender role orientations and the theory of circumscription and compromise

While the TPB is not typically used to explain gender differences, the theoretical framework needs to be enriched by bringing in conceptual accounts that are more explicitly applied to gender differences in occupational choices. Gender role orientations are defined as individual beliefs about the normal roles of men and women in family life and in the workplace (Coltrane and Adams, 2008; Somech and Drach-Zahavy, 2016), and they consist of the idea of gender essentialism (difference) and/or the idea of male superiority (inequality; Charles and Bradley, 2009). Such gender role orientations seem to play an important part in occupational gender imbalances, as they may frame perceptions and evaluations of different career pathways and decisions (e.g. Hadjar and Aeschlimann, 2015). The theory of circumscription and compromise (Gottfredson, 2002) appears to be meaningful for theorising the role of gender role orientations in vocational aspirations and choices. The main idea of this theory is that choosing occupations and related career paths or studies involves a process of eliminating certain occupational alternatives that do not fit the perceived characteristics of a person, in particular his/her self-concept (Leung, 2008). Gender is among the central characteristics against which occupational alternatives are evaluated. As gender role orientations define how a certain individual perceives gender, they are

crucial in the evaluation of whether certain occupations fit the self-concept. Alternatives that do not match the gender role orientations, and thus the ideals of the typical characteristics of one's gender, are eliminated and no longer considered. While the main mechanism in the theory of circumscription and compromise (Gottfredson, 2002) is perceived fit, the conceptual mechanism between gender role orientations and occupational choice also relates to gendered self-assessments (Correll, 2004) and "'individuals' confidence in their ability to fulfil the expected roles, competencies and identity features of a successful member of their profession" (Cech et al., 2011: 642). Taking into consideration the persistent gender imbalances in occupational choices, it becomes obvious that as long as male students continue to perceive both the fit of their characteristics with female-labelled subjects (e.g. social work) or female-labelled occupations and their skills regarding these subjects and occupations as low, they will refrain from choosing related career paths.

Hypotheses

With regard to the decision to enter a social science study programme, we focus on research hypotheses arising from the TPB.

Hypothesis 1: The more positive students' attitudes towards studying social sciences are, the greater will be their intention to study social science courses (e.g. because the study programme is perceived as interesting, a certain income is expected, or the work-life balance of social workers is perceived in a positive way) (TPB factor attitudes).

Hypothesis 2: The more students believe that their parents, friends, peers or the broader reference group (or even 'the society') value the social science study programme and the social work profession, the greater will be their intention to study social science courses (TPB factor subjective norms).

Hypothesis 3: The more students believe they are able to finish the study of social sciences successfully and that the institutional framework and the conditions allow undisturbed studies, the greater will be their intention to study social science courses (TPB factor perceived behavioural control).

According to conceptual considerations regarding gender role orientations—referring to Gottfredson's (2002) theory of circumscription and compromise—we assume impacts of gender role orientations on the TPB factors of attitudes, subjective norms and perceived behavioural control in respect of the intention to study a social science course; this is particularly the case for men, as social sciences, and especially social work, are female-labelled. This is the focus of this work.

Hypothesis 4: The more egalitarian students gender role orientations are, the more positive are male students' attitudes towards studying social sciences (TPB factor attitudes); the more male students believe that their parents, friends, peers or the broader reference group (or even 'the society') value the social science study programme and the social work profession (TPB factor subjective norms); and the more male students believe they are able to successfully finish the study of social sciences and that the institutional framework and the conditions allow undisturbed studies (TPB factor perceived behavioural control).

Methods, data, description

Sample selection, respondents' recruitment and instruments

The analyses are embedded in a Swiss research project aimed at finding solutions to the underrepresentation of men in social work study programmes. The quantitative part of the project is a prospective longitudinal study, the statistical population including all high school graduates in seven cantons of the German-speaking part of Switzerland in the period between September 2015 and April 2017. The method adopted to select an adequate random sample was cluster sampling. Among the participating schools, all students in the final classes were included. High school graduates were interviewed by means of a standardised web-based online survey before and after the school leaving examinations. The response rate at the school level was 40%, which led to a total of N=1,130 high school graduates participating in the first wave of the survey. The sample consisted of 46 per cent graduates from secondary school and 52 per cent graduates from technical secondary school, two per cent item nonresponse. The questionnaire employed for the survey was a German-language questionnaire. All instruments were administered and developed in the German language; for the Holland Occupational Themes, we used a reliable test developed in the German language by Hell et al. (2013). As the research project only related to the German-speaking part of Switzerland with its monolingual education systems, this strategy appeared to be sufficient.

The questionnaire

The questionnaire is a composite instrument including several scales and items from different instruments. In the questionnaire, we asked, among other things, for motives of academic subject choice and attractiveness of different academic subjects (Zwick and Renn, 2000); the work-related social network (Gianettoni et al., 2015); gender role stereotypes (O'Neil, 2008); and the Holland Occupational Themes (Hell et al., 2013; Nauta, 2010). Furthermore, the questionnaire asked for socio-demographic characteristics of the respondents (gender, age) and their parents (gender,

occupation and education) according to the International Standard Classification of Education (ISCED). In addition, the school career of the respondents was collected in detail, along with respondents' subject choices in school, former profession and satisfaction with it, and recent grades in important school subjects.

Measures

The measures used for the present analysis are described below, including information on origin and validity.

Dependent variable: field of study—social science courses. In order to inquire about the intended career choice of high school graduates, we used a multistage procedure. First, all respondents were asked in an open question what they intended to do immediately after their high school graduation. Forty per cent stated that they intended to study at a university, university of applied sciences, or school of teacher education. The remaining 60 per cent stated that they were planning an intermediate year, an internship, military/civil service, a language training programme, to seek a job immediately after their high school graduation, or they had no concrete idea.

By means of filter questions, some of the respondents (N=533) were asked again what they intended to do after, for example, the intermediate year. The majority of the participants stated that they intended to study at a university, a university of applied sciences, or a college of education after their temporary solutions (e.g. internship).

The results of the two questions were merged, and after deducting unit nonresponse and item nonresponse, a sample size of N=608 remained for further analysis. The open specification of the subjects was categorised according to a list of Bachelor's programmes at Swiss universities (Vocational Guidance, 2017). The dependent variable of study subject relates to study subjects that were mentioned by the participants as their first, second or third preference.

All in all, only 5 per cent of high school graduates chose social work as a subject of study. In order to provide sufficient cases for statistical analyses, all social science courses were merged (study subjects in the fields of health, care and counselling, teacher training, psychology, educational science, political science, sociology and social work) to form a comprehensive variable.

Explanatory variables. The sample consisted of 46 per cent (N=277) graduates from secondary schools and 52 per cent (N=318) graduates from more vocationally oriented technical secondary schools, two per cent item nonresponse. The social science background (secondary school) variable indicates that 8.3 per cent of graduates from secondary school chose to specialise

in philosophy, pedagogy or psychology; 29.2 per cent of graduates from technical secondary school had studied health and social work. Merging the two, a total of 19.8 per cent of the whole sample (N=595) chose social science subjects. The other graduates mostly opted for economics, law, technology, architecture or life sciences.

Males comprised 42 per cent of the high school graduates and females 58 per cent. The participants had an age range of 17 to 46 years, with an average age of 20 (*SD*=3.16, *Mdn*=20). The highest educational level of the parents was coded according to ISCED. A total of 34 per cent of fathers had tertiary education (ISCED categories 5A and 6 taken together); 19 per cent of mothers were in this category. For further analysis, a variable was formed to take into account only the highest level of education of the parents. The educational homogeneity of the parents was rather weak, with a correlation of r=0.46 (p<.01).

The high school graduates were asked about their last grade in mathematics and in German. The mean in mathematics was 4.67 (*SD*=0.86, *Mdn*=4.75); in German it was 4.78 (*SD*=0.47, *Mdn*=5.0). Note that in Switzerland, 1 indicates low achievement while 6 indicates very high achievement.

Using the gender role stereotypes scale (O'Neil, 2008), participants were asked to respond to nine different statements on a response scale running from (1) totally disagree to (6) fully agree (e.g. 'Men should also choose professions that are traditionally reserved for women—for example, social worker, nurse.'). Reliability analyses yielded two scales: one depicted a 'traditional role model' (Cronbach's α=.64, number of items=3), while the other expressed an 'egalitarian role model' (Cronbach's α=.85, number of items=6).

TPB factor attitudes towards behaviour. The anticipated labour market for social work and the anticipated prestige of social work were rated by the participants on a response scale ranging from (1) extremely bad to (6) outstanding (for labour market opportunities) and from (1) very low to (6) very high (for prestige) (Zwick and Renn, 2000).

TPB factor subjective norms. By means of two scales, respondents were asked to what extent high school graduates are encouraged by their parents (separately asked for fathers and mothers) or by their friends to become a professional in the social sector (e.g. social worker, social pedagogue, healthcare professional). The response scale ranged from (1) no encouragement to (6) great encouragement. The scale for parental encouragement showed excellent internal reliability (Cronbach's alpha=.92, number of items=4), as did the scale for encouragement by friends (Cronbach's α=.95, number of items=4) (based on Makarova et al., 2012). Internal consistency (Cronbach's α) for the scales is sufficient to enable analyses.

TPB factor perceived behavioural control. Participants assessed whether social work seems to be a 'typical women's job' or 'typical men's job' and whether they were able to imagine the learning content of the subject of social work. The six-point scale verbalised at the endpoints ranged from (1) more a typical women's job to (6) more a typical men's job; for the question about the learning content, the endpoints were (1) cannot imagine at all and (6) can well imagine (Zwick and Renn, 2000).

Statistical analysis

The quantitative data were analysed using the SPSS statistical package for descriptive analysis and Mplus for the structural equation models. The SEM approach allows for a simultaneous evaluation of direct and indirect effects, and thus of the complexity of our conceptual framework.

Ethical considerations

We provided our research participants with a written informed consent information document including everything they needed to know about the study to enable them to make an informed decision about participating. No ethical concerns arose from the responsible project funding (Swiss State Secretary for Education and Research, grant no. 254/15).

Results

The first step in our analysis involved an explorative evaluation of gender differences in the perception of certain characteristics of the social work profession. In our explorative analyses, we used the Mann–Whitney U Test to examine whether group differences exist between men and women (see Figure 2) and between those with and without a social science background (see Figure 3).

The results reveal significant differences between men and women in terms of both traditional role models and egalitarian role models. While women were more likely to have an egalitarian role model (M=5.23, SD=0.71, p<.001), men tended to prefer a traditional role model (M=2.65, SD=1.05, p<.001). The gender roles did not differ according to whether they had a social science background.

TPB factor attitudes towards behaviour. Men and women differed significantly in terms of assessing labour market opportunities and the prestige of social work. While men tended to attribute poorer labour market opportunities to social work (M=3.86, SD=1.15, p<.05), women tended to rate these better (M=4.09, SD=1.06, p<.05). The situation was similar with the prestige value, which was also lower for men (M=3.33, SD=1.12, p<.05) than for women (M=3.61,

SD=1.13, *p*<.05) (see Figure 2). High school graduates with a social science background estimated both the labour market opportunities (*M*=4.43, *SD*=.95, *p*<.001) and the prestige (*M*=3.78, *SD*=1.00, *p*<.01) of social work as being much higher than high school graduates without a social science background (for labour market opportunities: *M*=3.88, *SD*=1.09, *p*<.001; for prestige: *M*=3.41, *SD*=1.13, *p*<.01) (see Figure 3).

Insert Figure 2 about here

TPB factor subjective norms. Whether women or men are encouraged by their parents and friends to become a professional in the social sector differs significantly according to gender. Men are less likely than women to be encouraged by their parents (for men: *M*=2.5, *SD*=1.30; for women: *M*=2.91, *SD*=1.13, *p*<.001) and friends (for men: *M*=2.15, *SD*=1.17; for women: *M*=3.00, *SD*=1.46, *p*<.001) (see Figure 2).

High school graduates with a social science background were generally more motivated by their parents (*M*=3.48, *SD*=1.37, *p*<.001) and by their friends (*M*=3.75; *SD*=1.41, *p*<.001) (see Figure 3).

TPB factor perceived behavioural control. Men and women showed no significant differences in whether they rated social work more as a 'typical women's job' or a 'typical men's job'. Men (*M*=3.03, *SD*=1.41, *p*<.001) can imagine less than women (*M*=3.81, *SD*=1.38, p<.001) what will be studied in this subject (learning content) (see Figure 2). Respondents with a social science background were able to imagine learning content much better (*M*=4.46, *SD*=1.16, *p*<.001) than respondents without a social science background (*M*=3.19, *SD*=1.38, *p*<.001). The social science background did not influence whether social work was perceived as a male or female occupation (see Figure 3).

Insert Figure 3 about here

In the central step of our analysis, the intention to study a social science course was analysed with regard to direct and indirect effects of its determinants, estimating separate structural equation models for female and male students according to the hypotheses outlined above. The data analysis of choice is SEM (Muthén and Muthén, 2017). The hypothetical model resembled the TPB (Ajzen, 2002) as a conceptual framework to theorise the vocational decision in favour of a social profession. Additionally, gender role orientations, as outlined in the theory section, were included, as well as a social science background (secondary education) as a strong indicator of

previous decisions. Goodness-of-fit indices showed a strong fit between the conceptual model and the data (empirical model). Manifest variables in terms of mean scores were used to reduce the complexity. While the determinants under consideration explained 48 per cent of the variation of the dependent variable (intention to study a social science course) in the female sample, almost three quarters (73%) of the variance can be explained in the male sample.

While the attitude factor (relating to prestige and labour market chances), in contrast to Hypothesis 1, did not appear to have a direct effect on intention, the subjective norms (what parents and friends think about this vocational choice) appeared to be an important direct factor among female and male students. Thus, Hypothesis 2 ($p<.01$) found some backing in our results. For male students, perceived behavioural control (content of social science course is unclear, social science course does not fit the gender role) appeared to be the most influential obstacle to studying in a social sector study programme, as postulated in Hypothesis 3 ($p<.001$), However, as there were profound correlative links among the three TPB key factors in terms of attitude, subjective norms and perceived behavioural control, the factors with no direct impact on intention among male and/or female students showed at least indirect effects. Social origin—the highest educational achievement of the parents—showed no statistical impact on any of the variables and was therefore omitted in the final model. This may be due to some extent to the highly selective sample of students with a university entrance certificate (general upper-secondary school degree). Achievement in German language and mathematics also showed no impact at all, including no impact on perceived behavioural control. Egalitarian gender role orientations appeared to be influential in the male sample, in line with Hypothesis 4 ($p<.001$), as male students with more egalitarian gender roles showed a more positive attitude towards social sector professions, perceived their parents and friends as thinking more positively about the social sector, and perceived lower behavioural control (i.e. lower limitations to studying in a social sector study programme). Among the male students, egalitarian gender role orientations explained the intention to study in a social sector study programme well via subjective norms and perceived behavioural control as mediators. The profile of study in upper secondary school, functioning as an important initiator for later study and career paths, also showed profound effects. If a social science subject had been chosen before in school, female and male students scored higher on subjective norms to study in a social sector study programme, and lower on perceived behavioural control. Among female students, having chosen a social science subject already in school has a minor positive effect on attitude towards studying in a social sector programme. The profile chosen in secondary school has an additional direct effect on intention that is not mediated by any of the three TPB factors (attitude, subjective norms and perceived behavioural control).

****Insert Figure 4 about here****

Discussion

In this paper, we deal with the question of why only a few men decide to study a social science programme such as social work. To answer the question, we used the TPB and theories of gender role orientations, as well as a random cluster sample of high school graduates in the German-speaking part of Switzerland.

Reviewing and discussing the study hypotheses, results supported Hypotheses 2 and 3, that a social science course such as social work is studied if a) students believe that their parents, friends, peers or the broader reference group (or even 'the society') value the social work study programme and the social work profession; and b) if students believe they are able to finish the study of social work successfully and that the institutional framework and the conditions allow undisturbed studies. In contrast to our assumptions in Hypothesis 1, students' attitudes towards studying social sciences did not affect students' intention to study social sciences.

With regard to gender role orientations, Hypothesis 4 found support: the more egalitarian their gender role orientations, the more positively male students thought about studying social science courses. Egalitarian gender role orientations were also associated with a stronger belief among male students that their parents, friends, peers or the broader reference group (or even 'the society') value the social work study programme and the social work profession. Finally, more egalitarian gender role orientations were associated with a stronger belief in successfully finishing the study of social sciences and a belief that the institutional framework and the conditions allow undisturbed studies among male students. These findings are consistent with other empirical evidence referred to in the introductory section. They emphasise the importance of significant others' perceptions (Dennison et al., 2007; Warde, 2009) and of perceived obstacles, while positive attitudes in terms of preferences and utility function seem to play a minor role in (gendered) study choices.

Considering the applicability of the TPB (Ajzen, 2002) to study choice, our analysis has shown that research based on this theory provides some insights into the mechanisms behind study decisions. While the TPB is often used as a general framework (e.g. Cano et al., 2016), this inquiry into (gendered) study choices benefited from employing the exact model in the empirical analysis. However, the study failed in empirically reproducing the TPB model entirely, as attitudes towards social science courses did not directly affect intentions to study these courses. This may indicate that factors such as subjective norms against social science studies and professions, as well as

perceived obstacles to study social science programmes, are more important than a lack of positive attitude. Integrating gender role orientations appeared to be fruitful, as egalitarian gender role orientations among men showed a positive impact on the intention to study social science courses mediated via the TPB factors. While the TPB (Ajzen, 2002) does not formally include information about the roots of attitudes (or behavioural beliefs), subjective norms (or normative beliefs) or perceived behavioural control (or control beliefs), our results indicate that gender role orientations may be one of these roots. Presumably, gender role orientations function as frames affecting beliefs related to TPB factors.

Limitations

Certain limitations need to be taken into account when interpreting the results. The correspondence principle of the TPB (Ajzen, 2002), requiring that the TPB factors and the intention relate as precisely as possible to the same object of action, has been slightly violated. In our study, the outcome variable refers to social science courses, and the explanatory variables very often refer to social work. This slight lack of correspondence means a more rigid test for the TPB assumptions, as substantial effects of the TPB factors have been revealed despite the slightly different objects (social sciences versus social work) addressed.

Furthermore, within the scope of cross-sectional analysis, we could not examine the link between the intention and the actual decision of the high school graduates after a certain period of time: future empirical research should focus more on measuring the stability of intention over time (Sheeran, 2003). The students were questioned shortly before the upper-secondary school leaving examinations, a time when decisions might have already been made by choosing a major social subject in school (Leemann and Keck, 2005). Nevertheless, the effects of TPB factors are shown despite statistical control of students' social science background in secondary school.

Recommendations

Some implications and recommendations can be derived from the results in terms of what can be done to motivate prospective (male) high school graduates to pursue social science studies at universities, especially social work.

Our results show that a lack of information about study contents and gender role stereotypes prevent high school graduates from choosing a subject in the social sciences, while significant others are supportive. Therefore, measures related to the areas of public relations such as advertising campaigns may have a positive effect and increase the number of school leavers that choose social science courses. To reduce perceived obstacles regarding social science studies,

much more emphasis needs to be placed on presenting structured and easy-to-follow sample study trajectories. Transparent information should be provided on what is needed to study social sciences successfully and to work practically in related professions such as social work, with a special focus on possible obstacles (e.g. information deficits) and how they can be solved (Jones et al., 2006).

In order to avoid an information deficit about learning content regarding social science studies and to present the professional diversity within the social science field appropriately, vocational guidance should place much more emphasis on what can be learned and what can be done in the specific social science professions. To reduce prejudices against the female-labelled social science field, male role models for social professions are needed early in elementary school, and male and female professionals (e.g. male and female social workers) must be more visible in the public and the media (Tower, 2000). Misener (2001) compared the image of social work in different English-language newspapers and found that stories that focus on scandals and portray social workers as monitors are negatively associated with social work image. These strategies might deter suitable male and female students from studying social science programmes such as social work.

With regard to the subjective norms and groups of significant others, an image campaign for social science professions may be a fruitful tool, highlighting the genuine role of these professions in society, the status and prestige linked to such professions, and other benefits that link to these stimulating and flexible professions. Such an image campaign may also relate to gender roles, indicating that women and men are equally competent and that heterogeneity among social science professionals is beneficial (Jones et al., 2006; Khunou et al., 2012).

Furthermore, the presence and use of network resources – in terms of significant others – can help improve opportunities for action and educational decisions by providing network members with access to important information about study programmes. Findings from Dennison et al. (2007) indicate that students' affiliation with a social worker positively influenced both their perception and understanding of the profession (Warde, 2009).

Conclusions

Our results show different gender effects, as well as direct and indirect effects, for all the TPB factors. While the attitude factor does not appear to have a direct effect on intention, subjective norms appear to be an important direct factor among female and male students. However, for male students, perceived behavioural control (content of social science course is unclear, social science course does not fit the gender role) appears to be the most influential obstacle to studying social sciences. Gender role orientations and the question of how a social

science profession fits one's own gender identity appear to be of particular importance only among male students. This resembles other findings indicating that, on average, men are less flexible regarding gender roles than women (e.g. Hadjar and Aeschlimann, 2015), and that gender plays a significant role in how the social work profession is regarded and talked about (Khunou et al., 2012) and in students' academic achievement (Furness, 2012).

Acknowledgements

We would like to thank the study participants and the schools that participated in the project.

Funding

The Swiss State Secretary for Education and Research (grant no. 254/15) and the FHNW University of Applied Sciences, School of Social Work supported this work.

References

Aarts H and Dijksterhuis A (2000) Habits as knowledge structures: Automaticity in goal-directed behaviour. *Journal of Personality and Social Psychology* 78: 53–63.

Aeschlimann B, Herzog W and Makarova E (2015) Frauen in MINT-Berufen: Retrospektive Wahrnehmung des mathematisch-naturwissenschaftlichen Unterrichts auf der Sekundarstufe I. *Zeitschrift für Bildungsforschung* 5: 37–49.

Ajzen I (2002) Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology* 32: 665–683.

Arnold J, Loan-Clarke J, Coombs C, et al. (2006) How well can the theory of planned behavior account for occupational intentions? *Journal of Vocational Behavior* 69: 374–390.

Becker R, Haunberger S and Schubert F (2010) Studienfachwahl als Spezialfall der Ausbildungsentscheidung und Berufswahl. *Zeitschrift für Arbeitsmarktforschung* 42: 292–310.

Bieri-Buschor C, Bergweger S, Frei AK, et al. (2014) *Geschlechts(un)typische Studienwahl: Weshalb Frauen Ingenieurwissenschaften studieren und Männer Primarlehrer werden*. Projektbericht Pädagogische Hochschule Zürich (PHZ). Zürich: PHZ.

Buchmann M and Kriesi I (2009) Escaping the gender trap. Young women's transition into non-traditional occupations. In: Schoon I and Silbereisen RK (eds) *Transition from School to Work: Globalisation, Individualisation, and Patterns of Diversity.* Cambridge, NY: Cambridge University Press, pp. 193–215.

Buchmann M and Kriesi I (2012) Geschlechtstypische Berufswahl: Begabungszuschreibungen, Aspirationen und Institutionen. In: Becker R and Solga H (eds) *Soziologische Bildungsforschung. Sonderheft 52 der KZfSS.* Wiesbaden: Springer VS, pp. 256–280.

Budde J, Böhm M and Willems K (2009a) Wissen, Image und Erfahrungen mit Sozialer Arbeit – relevante Faktoren für die Berufswahl junger Männer? *Zeitschrift für Sozialpädagogik* 7: 264–283.

Budde J, Willems K and Böhm M (2009b) 'Ich finde das gehört einfach zum Leben dazu, anderen Leuten zu helfen'. Positionierungen junger Männer zu Berufsfeldern Sozialer Arbeit. In: Budde J and Willems K (eds) *Bildung als sozialer Prozess.* Weinheim: Juventa, pp. 193–210.

Cano JA, Tabares A and Alvarez C (2016) University students' career choice intentions. *Espacios* 38: 20.

Cech E, Rubineau B, Silbey S, et al. (2011) Professional role confidence and gendered persistence in engineering. *American Sociological Review* 76: 641–666.

Charles M and Bradley K (2009) Indulging our gendered selves? Sex segregation by field of study in 44 countries. *American Journal of Sociology* 114: 924–976.

Christie A and Campling J (2001) *Men and Social Work*. Basingstoke: Palgrave.

Christie A and Kruk E (1998) Choosing to become a social worker: Motives, incentives, concerns and disincentives. *Social Work Education* 17: 21–34.

Coltrane S and Adams M (2008) *Gender and Families* (Vol. 5). Lanham, Md.: Rowman & Littlefield Publishers.

Correll SJ (2004) Constraints into preferences: Gender, status, and emerging career aspirations. *American Sociological Review* 69: 93–113.

Csikai EL and Rozensky C (1997) Social work idealism and students' perceived reasons for entering social work. *Journal of Social Work Education* 33: 529–538.

Dennison S, Poole J and Qaqish B (2007) Students' perceptions of social work. *Social Work* 52: 350–360.

European Commission's Expert Group on Gender and Employment (EGGE) (2009) *Gender segregation in the labour market. Root causes, implications and policy responses in the EU*. Luxembourg: Publications Office of the European Union.

Evers A and Sieverding M (2015) Academic career intention beyond the PhD: Can the theory of planned behavior explain gender differences? *Journal of Applied Social Psychology* 45: 158–172.

Federal Statistical Office (FSO) (2011) *Frauen und Männer an den Schweizer Hochschulen. Indikatoren zu geschlechtsspezifischen Unterschieden*. Neuchâtel: FSO.

Federal Statistical Office (FSO) (2017) *Studien- und Lebensbedingungen an den Schweizer Hochschulen. Hauptbericht der Erhebung 2016 zur sozialen und wirtschaftlichen Lage der Studierenden*. Neuchâtel: FSO.

Frome PM, Alfeld CJ, Eccles JS, et al. (2006) Why don't they want a male-dominated job? An investigation of young women who changed their occupational aspirations. *Educational Research and Evaluation: An International Journal on Theory and Practice* 12: 359–372.

Furness S (2012) Gender at work: Characteristics of 'failing' social work students. *British Journal of Social Work* 42: 480–499.

Georg W (2005) Studienfachwahl: Soziale Reproduktion oder fachkulturelle Entscheidung. *ZA-Information* 57: 61–82.

Gianettoni L, Arruda CC, Gauthier JA, et al. (2015). Berufswünsche der Jugendlichen in der Schweiz: stereotype Rollenbilder und die Vereinbarkeit von Familie und Beruf. *Social Change in Switzerland N 3*. Lausanne: Universität Lausanne.

Giles M and Larmour S (2000) The theory of planned behavior: A conceptual framework to view the career development of women. *Journal of Applied Social Psychology* 30: 2137–2157.

Gottfredson LS (2002) Gottfredson's theory of circumscription, compromise, and self-creation. In: Brown D (ed) *Career Choice and Development.* San Francisco, CA: Jossey-Bass, pp. 85–148.

Graf U, Schmid G, Knill T, et al. (2015) *Männer in der Sozialen Arbeit - Schweizer Einblicke*. Berlin: Frank & Timme.

Hadjar A and Aeschlimann B (2015) Gender stereotypes and gendered vocational aspirations among Swiss secondary school students. *Educational Research* 57: 22–42.

Hell B, Wetzel E and Päßller K (2013) *Verb-Interessenstest (VIT)*. Konstanz: Universität Konstanz.

Jones CA, Vela E, Vang TJ, et al. (2006) Perceptions of social work: Undergraduate students assess the profession. *The Journal of Baccalaureate Social Work* 12: 1–12.

Khunou G, Pillay R and Nethononda A (2012) Social work is 'women's work': An analysis of social work students' perceptions of gender as a career choice determinant. *The Social Work Practitioner-Researcher* 24: 120–135.

Kim-Soon N, Ahmad AR and Ibrahim NN (2016) Theory of planned behavior: Undergraduates' entrepreneurial motivation and entrepreneurship career intention at a public university. *Journal of Entrepreneurship: Research & Practice* 2016: 1–14.

Klein U and Wulf-Schnabel J (2007) Männer auf dem Weg aus der Sozialen Arbeit. *WSI Mitteilungen* 3: 138–144.

Knill T (2012) *Hintergründe des geringen Fachmänneranteils in Berufen Sozialer Arbeit.* Master's Thesis, St. Gallen: Fachhochschule St. Gallen.

Labra O, Bergheul S and Turcotte P (2017) Men studying 'female' professions in Québec. *The International Journal of Interdisciplinary Social and Community Studies* 12: 41–52.

Labra O, Chamblas I, Turcotte P, et al. (2018) Is it a man's world? An exploratory study of male students in social work: Experiences from Chile. *British Journal of Social Work* 48: 769–786.

Leemann RJ and Keck A (2005) *Der Übergang von der Ausbildung in den Beruf. Die Bedeutung von Qualifikation, Generation und Geschlecht*. Neuchâtel: FSO.

Leung SA (2008) The big-five career theories. In: Athanasou JA and Esbroeck R (eds) *International Handbook of Career Guidance.* Dordrecht: Springer, pp. 115–132.

Leuze K and Strauß S (2016) Why do occupations dominated by women pay less? How 'female-typical' work tasks and working-time arrangements affect the gender wage gap among higher education graduates. *Work, Employment & Society* 30: 802–820.

Lörz M (2012) Mechanismen sozialer Ungleichheit beim Übergang ins Studium. In: Becker R and Solga H (eds) *Soziologische Bildungsforschung. Sonderheft 52 der KZfFSS.* Wiesbaden: Springer VS, pp. 302–324.

Lörz M, Schindler S, and Walter JG (2011) Gender inequalities in higher education: Extent, development and mechanisms of gender differences in enrolment and field of study choice. *Irish Educational Studies* 30(2): 179–198.

Makarova E and Herzog W (2013) *Geschlechtersegregation bei der Berufs- und Studienwahl von Jugendlichen*. Münster: Waxmann.

Makarova E and Herzog W (2014) Gender-atypical career choices of young women: Must the role model be female? *Zeitschrift für Soziologie der Erziehung und Sozialisation* 34: 38–54.

Makarova E, Herzog W, Ignaceswska J, et al. (2012) Geschlechtsuntypische Berufs- und Studienwahlen bei jungen Frauen. *Forschungsbericht Nr. 42.* Bern: Institut für Erziehungswissenschaften.

Millar R and Shevlin M (2003) Predicting career information-seeking behavior of school pupils using the theory of planned behavior. *Journal of Vocational Behavior* 62: 26–42.

Misener EK (2001) *The image of social work in US, UK, and Canadian newspapers.* New York: Albany State University.

Muthén LK and Muthén BO (2017) *Mplus User's Guide. Statistical Analysis with Latent Variables,* Los Angeles, CA: Muthén & Muthén.

Nauta MM (2010) The development, evolution, and status of Holland's theory of vocational personalities: Reflections and future directions for counseling psychology. *Journal of Counseling Psychology* 57: 11–22.

O'Neil JM (2008) Using the gender role conflict scale: New research paradigms. Summarizing 25 years of research on men's gender role conflict and clinical implications. *The Counseling Psychologist* 36: 358–445.

Presley A, Damron-Martinez D and Zhang L (2010) A study of business student choice to study abroad: A test of the theory of planned behavior. *Journal of Teaching in International Business* 21: 227–247.

Riegle-Crumb C, King B, Grodsky E, et al. (2012) The more things change, the more they stay the same? Prior achievement fails to explain gender inequality in entry into STEM college majors over time. *American Educational Research Journal* 49: 1048–1073.

Rompf EL and Royse D (1994) Choice of social work as a career: Possible influences. *Journal of Social Work Education* 30: 163–171.

Schwiter K, Hupka-Brunner S, Huber E, et al. (2014) Warum sind Pflegefachmänner und Elektrikerinnen nach wie vor selten? Geschlechtersegregation n Ausbildungs- und Berufsverläufen junger Erwachsener in der Schweiz. *Swiss Journal of Sociology* 40: 401–428.

Sheeran P (2003) Mediator of moderators: Temporal stability of intention and the intention-behavior relations. *Personality and Social Psychology Bulletin* 29: 205–215.

Smith JR, Terry DJ, Manstead AS, et al. (2008) The attitude-behavior relationship in consumer conduct: The role of norms, past behavior, and self-identity. *The Journal of Social Psychology* 148: 311–334.

Solga H and Pfahl L (2009) *Wer mehr Ingenieurinnen will, muss bessere Karrierechancen für Frauen in Technikberufen schaffen*. Berlin: WZB.

Somech A and Drach-Zahavy A (2016) Gender role ideology. *The Wiley Blackwell Encyclopedia of Gender and Sexuality Studies*, 1–3. Available at: https://doi.org/10.1002/9781118663219.wbegss205 (accessed 19 June 2019).

Staatssekretariat für Bildung, Forschung und Innovation (SBFI) (2017) *Frauen und Männer an Schweizer Hochschulen: Indikatoren zur Chancengleichheit in Studium und wissenschaftlicher Laufbahn*. Bern: SBFI.

Stöger H, Ziegler A and Heilemann M (2012) *Mädchen und Frauen in MINT: Bedingungen von Geschlechtsunterschieden und Interventionsmöglichkeiten.* Münster: LIT Verlag.

Sutter N and Paulson S (2016) Predicting college students' intention to graduate: A test of the theory of planned behaviour. *College Student Journal* 50: 409–442.

Taylor RC (2015) Using the theory of planned behaviour to understand students' subject choices in post-compulsory education. *Research Papers in Education* 30: 214–231.

Tower K (2000) In our own image: Shaping attitudes about social work through television production. *Journal of Social Work Education* 36: 575–586.

Vocational Guidance (2017) Bachelor-Studienrichtungen an den Schweizer Hochschulen. Available at: https://berufsberatung.ch/dyn/show/2468 (accessed 19 June 2019).

Warde B (2009) Why social work, and what does the future hold? The narratives of recently graduated Hispanic and African-American male BSW and MSW students. *Journal of Ethic & Cultural Diversity in Social Work* 18: 129–145.

Watt HMG (2008) What motivates females and males to pursue sex-stereotyped careers? In: Watt HMG and Eccles JS (eds) *Gender and Occupational Outcomes. Longitudinal Assessments of Individual, Social, and Cultural Influences.* Washington, DC: American Psychological Association, pp. 87–113.

Wettstein E and Gonon P (2009) *Berufsbildung in der Schweiz*. Bern: Hep Verlag.

Zwick MM and Renn O (2000) *Die Attraktivität von technischen und ingenieuerwissenschaftlichen Fächern bei der Studien- und Berufswahl junger Frauen und Männer.* Stuttgart: Akademie für Technikfolgenabschätzung in Baden-Württemberg.

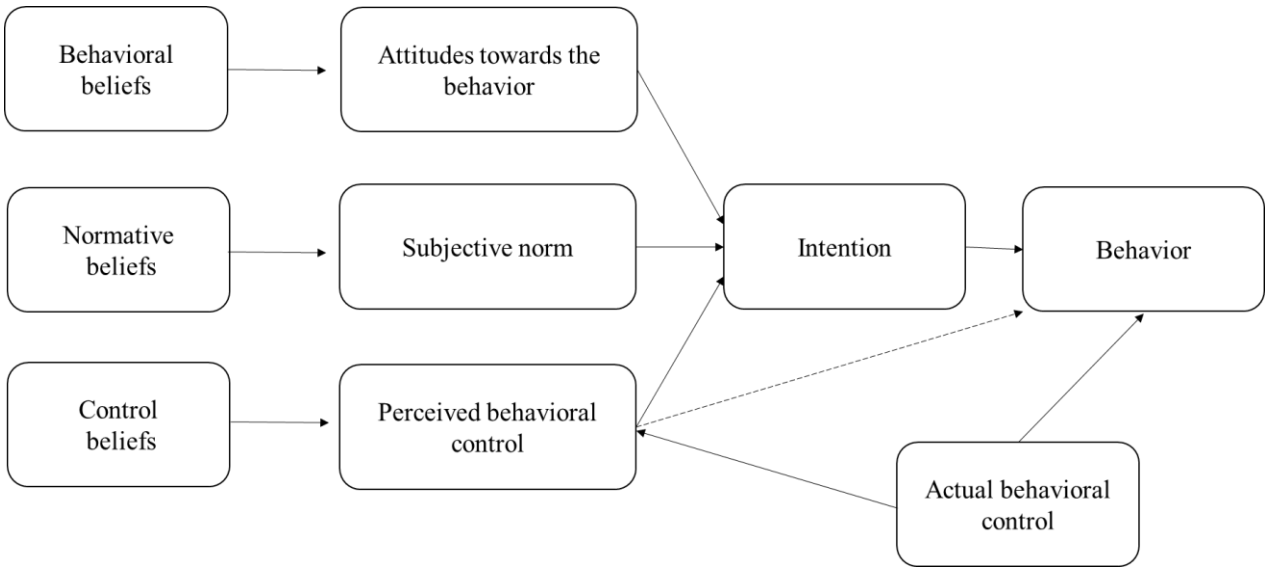
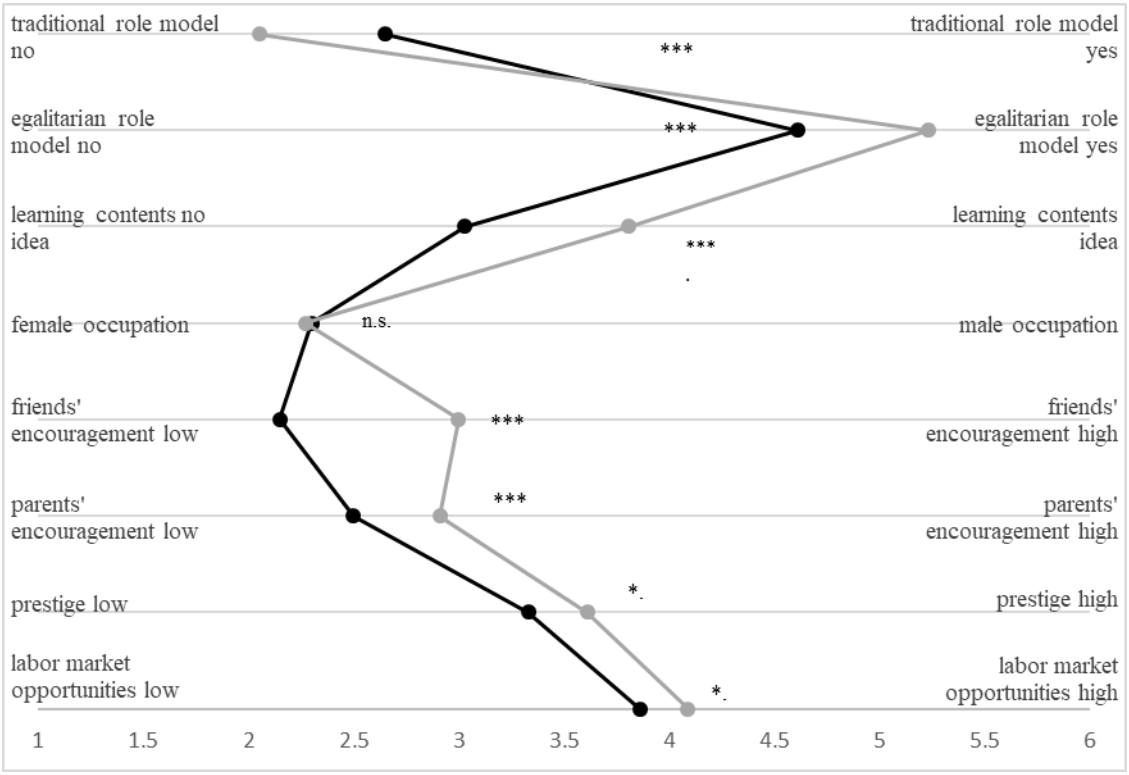
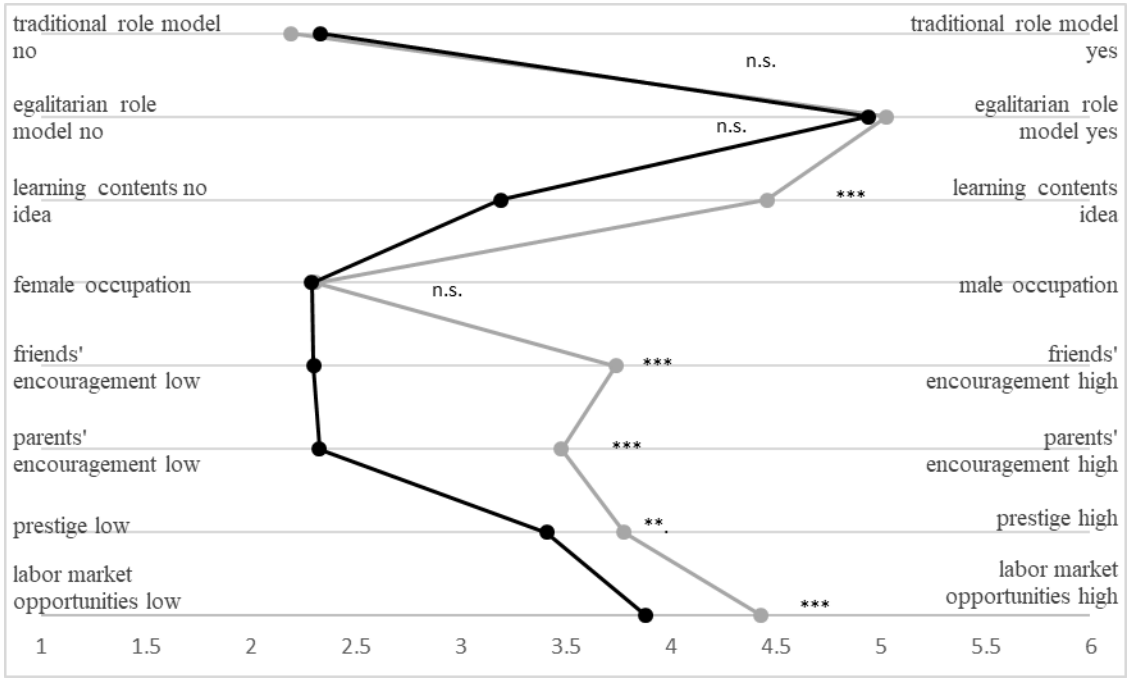


Figure 1: The theory of planned behavior (Ajzen 2002).



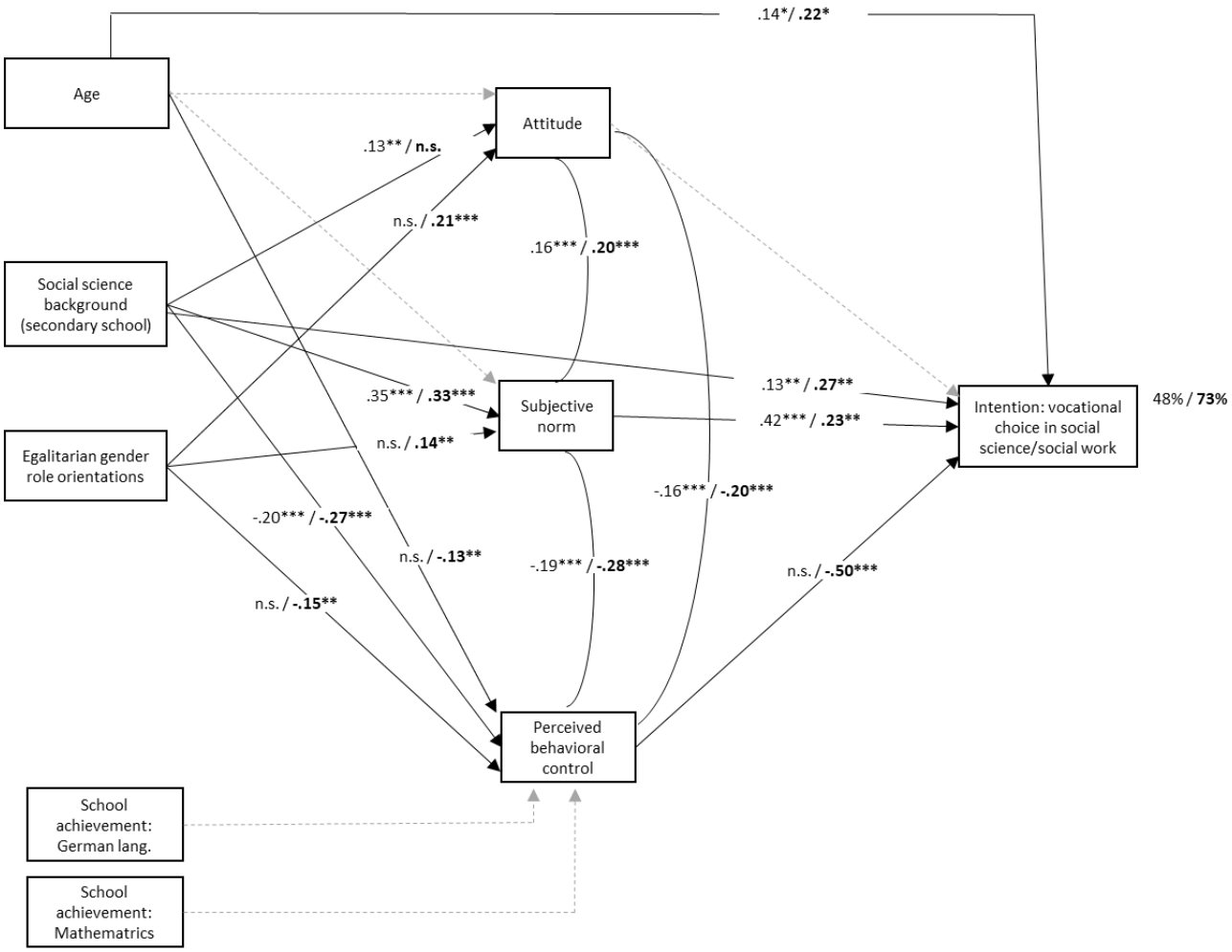
Notes: mean: black line (men), gray line (women), ***p<.001, **p<.01, *p<.05

Figure 2: Semantic differential: Attributes of the social work profession by gender.



Notes: mean: black line (no social science background), gray line (social science background), ***p<.001, **p<.01, *p<.05

Figure 3: Semantic differential: Attributes of the social work profession by social science background.



Notes: *N*=244 (women), ***N*=189 (men)**; path coefficients (normal font: women, **bold font: men**);

***p<.001, **p<.01, *p<.05; goodness of fit: X^2=22.31, degrees of freedom=16, p=0.13;

RMSEA=.03; CFI=.99

Figure 4: Structural equation model: Study choice social science courses.