Socio-Economic Conditions of Rural Georgian Households and their Behavioral Intentions Regarding Tourism Development – An Empirical Analysis

Dissertation to obtain the Doctoral Degree
at the Faculty of Social Sciences and Cultural Studies,

Justus Liebig University Giessen

submitted by
Jennifer Heiny

First supervisor:	Prof. i.R. Dr. Peter Schmidt
Second supervisor:	Prof. i.R. Dr. Ingrid-Ute Leonhäuser
Third supervisor:	Prof. Dr. Thomas Brüsemeister

Giessen, January 2017

Acknowledgment

Über den gesamten Zeitraum der Promotion hinweg – angefangen bei den ersten Überlegungen, dieses Projekt anzugehen, in Zeiten des produktiven Arbeitens, aber auch wenn es stockte, bis hin zum „fertigen Produkt“ – haben mich viele Personen auf dem Weg begleitet. Ihnen gilt mehr Dank, als ich es in Worten ausdrücken kann, trotzdem versuche ich dies hier.

In erster Linie danke ich meinen Betreuern Peter Schmidt und Ingrid-Ute Leonhäuser für die beständige Unterstützung, die vielen produktiven, spannenden, motivierenden und teilweise auch sehr herausfordernden Gespräche – meist entweder im ZEU oder bei Klatschmohn. Ingrid-Ute Leonhäuser danke ich insbesondere für das Vertrauen, dass sie von Beginn an in mich gesetzt hat und die Chance, im AMIES Projekt internationale Erfahrungen sammeln zu dürfen, Wissen praktisch umzusetzen und meine Ergebnisse auf mehreren internationalen Tagungen zu präsentieren. Peters Einschätzungen und Rückmeldungen haben besonders die teils sehr mühsame Arbeit am Modell immer wieder neu belebt und mir Motivation zum Weitermachen gegeben – vielen Dank dafür und auch für die vielen Literaturhinweise! Thomas Brüsemeister danke ich für seine Begeisterungsfähigkeit für mein Dissertationsvorhaben und die spontane Bereitschaft, sich als dritter Gutachter mit meiner Promotion auseinander zu setzen. An dieser Stelle danke ich auch Gero dafür, dass er schon bei den ersten Überlegungen zur Mitarbeit am AMIES Projekt meinen Blick für das Promotionsvorhaben geschärft hat und mir neben inhaltlichen Aspekten auch zur Promotion allgemein mit Rat und Tat zur Seite stand.

Das ZEU-Team hat durch die internationale und interdisziplinäre Zusammensetzung immer für einen Blick über den eigenen Tellerrand gesorgt. Ich danke dem gesamten ZEU-Team für die sehr gute Arbeitsatmosphäre, die unheimlich große Horizonterweiterung durch unterschiedlichste Begegnungen und die vielen schönen Mittagspausen in geselliger Runde. Besonderer Dank gilt an dieser Stelle Matthias für die Möglichkeit, diese Zeit am ZEU verbringen zu können und Martin, Sarah, Iris, Nino und Tini für ihre Aufmunterungen und Unterstützung. Dem gesamten AMIES-Team danke ich für den regen interdisziplinären Austausch sowie der VolkswagenStiftung für die finanzielle Unterstützung der Forschung in Georgien. Vielen Dank auch an meine Peer-Mentoring Gruppe Empirische Bildungs- und Sozialforschung für den methodischen Austausch und an das GGS für die Unterstützung unseres Workshopprogramms.

Einen großen Dank verdienen auch alle, die in Georgien mit geforscht, befragt und geantwortet haben: I thank all our Georgian partners – the professors in our project, the Georgian PhD students (especially Giorgi Mamniashvili and Giorgi Shioshvili), our dedicated interviewers and all the households that participated in our survey – დიდ მადლობა! Ebenfalls danke ich all den Personen, die bei Tagungen, Vorträgen und zu Manuskripten konstruktive Rückmeldungen gegeben haben.

Den größten Dank verdienen meine Familie und meine Freunde, die hin und wieder mehr, aber meistens eher weniger mit meinen abstrusen Abbildungen und Ausführungen anfangen konnten, mich trotzdem bei diesem Projekt unterstützt und für Ablenkung gesorgt haben, wenn ich von der „Diss“ gerade nichts mehr sehen oder hören wollte. Ganz besonders danke ich in dieser Gruppe Wanda, die sich immer viel Zeit für Gespräche und Rückmeldung zu SEMs, deren Model Fit Werten und scheinbar endlosen Daten genommen hat; Julia, die mich im Prozess auf vielfältige Weise immer unterstützt, geduldig Rückmeldungen gegeben und diese Arbeit quasi mit in die Wege geleitet hat; Jessi (die vermutlich stärker wollte, dass ich promoviere, als ich selbst :-)), die immer so fest an mich geglaubt hat, mit mir über psychologische Aspekte meiner Arbeit diskutiert und philosophiert hat. Stefan und Ford danke ich für ihre sprachlichen Anmerkungen. Ich danke auch dem „Club Flip Flop Georgia“, mit dem ich Georgien nicht nur als Untersuchungsobjekt kennen lernen konnte, sondern auch die unglaubliche Vielfalt und Schönheit des Landes tiefer entdecken konnte.

Ich danke meinen Eltern Hans und Christiane sehr dafür, dass ihnen unsere Bildung immer so wichtig war, dass sie mir so vieles ermöglicht haben und dass sie mir immer meine eigenen Entscheidungen überlassen haben. Lukas hat in ganz besonderer Form zu meiner Promotion beigetragen – er hat mir den Rücken freigehalten, wenn ich selbst keine Kraft hatte, bringt mich zum Lachen, wenn ich es brauche und hat die Geduld, die mir selbst so oft fehlt. Danke für all das und all die weiteren vielen kleinen Dinge, die ich gar nicht aufzählen kann! Genauso danke ich meinem Hauskreis, der mich im Gebet immer wieder unterstützt hat, und Gott für seinen Segen.

დიდ მადლობა!

Didi madloba!

List of Contents

List of Figures

List of Tables

List of Equations

List of Abbreviations

AIC	Akaike Information Criterion
AMIES	Analysing Multiple Interrelationships between Environmental and Societal Processes in Mountainous Regions of Georgia
AMOS	Analysis of Moment Structures (IBM SPSS Amos 22: package for SPSS)
APA	Agency for Protected Areas
a.s.l.	Above Sea Level
ATT	Attitude
AVE	Average variance extracted
BMZ	German Federal Ministry for Economic Cooperation and Development (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung)
CARE	Cooperative for Assistance and Relief Everywhere International
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CIS	Commonwealth of Independent States
CSO	Civil Societal Organization
df	Degrees of freedom
dt/ha	Decitons per hectare
EFA	Exploratory Factor Analysis
EU	European Union
e.g.	exempli gratia (for example)
FAO	Food and Agriculture Organization
FIML	Full Information Maximum Likelihood
GDP	Gross Domestic Product
GEL	Georgian Lari
GeoStat	National Statistics Office of Georgia
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Society for International Cooperation)
GLOBE	Global Leadership and Organizational Behavior Effectiveness
GSSR	Georgian Soviet Socialist Republic
i.e.	id est (that is)
ILO	International Labour Organization
IMF	International Monetary Fund
INT	Intention
J.H.	Jennifer Heiny
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
kg	Kilogram

MAR	Missing at Random
MCAR	Missing Completely at Random
Me	Mediator, Mediating Variable
MEPNR	Ministry of Environment Protection and Natural Resources
MIMIC	Multiple Indicators and Multiple Causes
ML	Maximum Likelihood
Mo	Moderator, Moderating Variable
n	Sample size
NATO	North Atlantic Treaty Organization
NFI	Normed Fit Index
NGO	Non-Governmental Organization
NNFI	Non-Normed Fit Index
OECD	Organisation for Economic Co-operation and Development
PBC	Perceived behavioral control
RAA	Reasoned Action Approach
RML	Robust Maximum Likelihood
RMSEA	Root Mean Square Error of Approximation
SEM	Structural Equation Model(ing)
sig.	Significance or significant
SN	Subjective norm
SPSS	Statistical Product and Service Solutions (IBM SPSS Statistics 22)
SRMR	Standardized Root Mean Squared Residual
SD	Standard Deviation
TACT	Target, Action, Context and Time
TLI	Tucker-Lewis Index
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
USA	United States of America
USAID	United States Agency for International Development
USSR	Union of Soviet Socialist Republics
vs.	Versus
X	Independent or Explanatory Variable
Y	Dependent Variable
ZEU	Center for international Development and Environmental Research, Justus Liebig University Giessen

1 Introduction

1.1 Context of this Research and Problem Statement

This research emerged from the international and interdisciplinary research project AMIES – Analysing Multiple Interrelationships between Environmental and Societal Processes in Mountainous Regions of Georgia. The project stems from a joint endeavor of scientists from the Justus Liebig University, Gießen, Germany, the Ilia Chavchavadze State University, Tbilisi, Georgia and the Ivane Javakhishvili Tbilisi State University, Georgia and was funded by the Volkswagen Foundation. By means of a multi-disciplinary approach, the project analyzes relationships between ecological processes and societal developments in the country of Georgia in order to foster a sustainable use of land that also enhances the quality of life of the local population.[1] While three of the four subprojects of AMIES focus on ecological aspects, the fourth subproject providing the data for this research concentrates on the socio-economic living conditions of rural Georgian households in the Caucasus.[2]

With a poverty line at $1.25/day of disposable income per person (based on purchasing power parity) for Georgia, 16 % of the population existed below the poverty line during the year of the AMIES household survey (2011). The urban poverty per capita ratio on the national level hovered at 13 %, while the poverty ratio per capita for rural areas was at 22 %.[3] Sources confirm that agricultural activities are characterized by low productivity and output, mainly carried out for subsistence purposes, and thus lack economic growth.[4] The low agricultural productivity is considered a crucial cause of the prevailing poverty in Georgia.[5] Despite the low output of this sector, the percentage of the population employed in agriculture has remained above 50 % from 1999 to 2007.[6] Yet, if not for the cultivation of parcels of land for family subsistence, poverty rates would be even higher.[7] At the same time, disputes with Russia have caused unstable trade relations in recent years and liberalized import regulations have swamped the Georgian market with cheap products from neighboring countries, oftentimes making local agricultural production unprofitable.[8]

The reasons for the high poverty rate in Georgia are multifaceted. Part of it is related to governance practices, malfunctioning markets, issues at the community level and security concerns in the case of internally displaced people due to the ongoing conflicts with Abkhazia and South Ossetia. The amount of money spent on agriculture for 2009 and 2010 was 1.5 % and 0.8 % of overall government spending respectively, thereby showing that agriculture was not a high priority for the national government, while the local governments have few legal responsibilities and hardly any fiscal autonomy. Especially rural communities lack the financial means to invest in the necessary (high

[1] Cf.: Waldhardt, Abdaladze, Otte & Simmering 2011, pp. 5f.
[2] Cf.: Volz, Chkoidze & Leonhäuser 2011, p. 33.
[3] Cf.: World Bank 2015a.
[4] Cf.: Schulze, Tillack & Mosashvili 2003; Kegel 2003; Kötschau, Sepashvili & Narimanidze 2009.
[5] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, pp. 4f.
[6] Cf.: World Bank 2015a. Unfortunately there is currently no more recent data on employment by sector.
[7] Cf.: Kötschau 2012, p. 167.
[8] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 11.

quality) seeds and in new machinery, nor do they have access to adequate veterinary services and affordable credit. These resources need to be subsidized by the government in order for farming households to acquire them. The fact that such resources need support can in itself be seen as a symptom of market failure. Another logistical problem occurs in selling agricultural products, since transportation to regional markets is particularly difficult for farming households within remote mountainous areas, and in Tbilisi market stalls are hard to come by. Access to international markets remains an objective of the Georgian government, but the relationship with the most natural trading partner Russia is tense. As is the case in other republics of the former Soviet Union, civic participation is very limited and in the case of Georgia, strangers outside of a close network of family ties are not trusted. There are also security concerns related to both economic and physical security issues, destabilizing these fragile markets even further.[9]

Private households – particularly in rural mountainous regions – rely on agricultural production for subsistence use and this activity remains an important factor for keeping households from slipping even deeper into poverty.[10] It should be noted, however, that for many private households, being involved in agricultural activities is a necessary means to an end and many members of agricultural households would rather find alternative employment.[11] As a consequence, part of the workforce abandons rural regions in search of better job opportunities, leaving behind an ageing population with further negative effects on productivity.[12] Young people often leave for larger cities such as Tbilisi and Kutaisi in order to study and try to find a job there after their studies.[13] Taking into account the low productivity of the agricultural sector, the fact that people consider their agricultural activities as a temporary solution and given the depopulation of rural areas, other sources of monetary income need to be considered by private households in rural mountainous regions. In contrast to the more traditional agricultural activities that are carried out in the research regions mainly due to the need to supply for basic needs, the tourism sector offers a comparatively more up-to-date perspective of revenue generation. The number of tourists in Georgia has increased by more than five times from 2008 to 2014.[14] The tourism sector is regarded to be an auspicious sector and the government is supporting this development.[15]

By examining data from two mountainous regions in Georgia (Kazbegi and Borjomi), we shall make an assessment of their current agricultural activities. In order to provide a sound data basis to answer the research questions, a targeted questionnaire was designed and pretested by the author.[16] The descriptive account will be enhanced by an analysis of the households' behavioral intentions regarding an expansion of their activities in the field of tourism and its necessary infrastructure. Knowledge on the underlying psychological components can serve as a starting point for

[9] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, pp. 19–25 and 32f.
[10] Cf.: Kötschau, Sepashvili & Narimanidze 2009, p. 237; Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 27; Kegel 2003.
[11] Cf.: Kegel 2003, p. 154; Kötschau 2012, pp. 167f.
[12] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 31.
[13] Cf.: Badurashvili & Nadareishvili 2012, p. 9.
[14] Cf.: National Statistics Office of Georgia (GeoStat) 2013b, p. 211, 2015f, p. 211.
[15] Cf.: United States Agency for International Development (USAID) 2012b, p. 8.
[16] Cf.: Volz 2011.

interventions.[17] It is of special interest to find out which of the constructs influences the behavioral intentions the most and to detect significant underlying beliefs as starting points for possible interventions.

Driven by the desire to understand which factors influence behavioral intentions or motives of private households, this research contributes to the social sciences by enhancing knowledge on the application of a scientific theory in a society which is atypical for this kind of research. The Theory of Planned Behavior (TPB) has been applied to questions regarding behavioral intentions and behavior many times over, but oftentimes the target population is from Western societies.[18] However, the TPB has been able to explain considerable amounts of variance in intentions in a multitude of studies, covering all kinds of activities. Identifying the amounts and shares of variance that are explained by the three explanatory constructs attitude, subjective norm and perceived behavioral control that are proposed to be explaining intention in the TPB will help to comprehend what drives the intentions of the households in the research areas.

1.2 Added Value

In the past years, researchers from various disciplines have been active in Georgia. Chapter 2.3 gives an overview of research from natural sciences, social and political sciences and different methodological approaches such as economic analyses, case studies and experimental approaches that have been carried out in Georgia. Many of these research activities are from other scientific fields. Researchers such as Kötschau; Kegel; Lerman; Schulze, Tillack & Mosashvili; Haerdle & Bontjer (2012; 2003; 2006; 2003; 2010) have also worked with quantitative household data, but in different regions of Georgia and with slightly different foci. Based on the data from the household survey in Kazbegi and Borjomi, a comprehensive picture of the living conditions and activities in agriculture and tourism of private households in selected villages of both regions is given.

The research at hand is also unique in its combination of the study region with an application of the Theory of Planned Behavior. The present study contributes to the scientific community by providing an example of an application of the Theory of Planned Behavior in a cultural context that is less common than research in Western societies. Most of the applications that are cited in a large meta-study on the Theory of Planned Behavior that is referred to in Chapter 6.3.1 were conducted in Western societies, oftentimes with college students. The sample that was used here differs greatly from these investigations since it is from a collectivist culture and also the educational status is different. [19] Even if respondents also have a university degree, they are in a totally different point of their lives than students. There are some studies that also chose to analyze intentions of people in other cultural backgrounds, such as Liñán & Chen (2009) who work with data from Taiwan, or studies that focus on farmers, such as Hansson, Ferguson & Olofsson (2012), or studies that look at tourism, such as Sparks & Pan (2009). However, the combination of quantitative background information on activities in both agriculture and tourism with an analysis of behavioral intentions to enhance or start

[17] Cf.: Fishbein & Ajzen 2010, pp. 331f.
[18] See e.g. the studies included in the meta-study by Armitage & Conner (2001) which mostly features studies in Western societies.
[19] Cf.: Gupta & Hanges 2004, pp. 183–186; Gelfand, Bhawuk, Nishii & Bechtold 2004, pp. 463–473.

activities within tourism infrastructure is unique to the best knowledge of the researcher. Using this sample provides evidence for the fact that the Theory of Planned Behavior can be applied to collectivist cultures as well since the basic structures of the theory were confirmed. The results furthermore indicate that in such a case, the subjective norm component, i.e. important referent groups such as family and friends, has a more prominent role than it usually does while the attitude component that is often the strongest predictor was not found to exert a significant influence on intentions to enhance the tourism supply.[20]

The model of the Theory of Planned Behavior incorporates beliefs which underlie the latent constructs which in turn influence intention. This research is also special due to the incorporation of these beliefs. Although the use of beliefs is recommended by Fishbein & Ajzen (2010), the combination of belief-based measures with global measurements is not frequently done in practice. By using this approach, this study identifies possible starting points for interventions (see Chapter 7).[21]

Aside from the exceptional sample, this study tests Yzer's (2007) assumption that perceived behavioral control moderates the influence of attitude and subjective norm on intention. For the case at hand, it was not possible to find evidence for a moderation effect from perceived behavioral control. However, several aspects make it difficult to detect such a moderated effect, especially with small sub-sample sizes as in this case. For a discussion of these issues see Chapter 6.3.3.

This study also provides proof for a mediated effect from a background variable (in this case experience) on intention. As proposed by Fishbein & Ajzen, the effect of experience is fully mediated by the constructs of the model and no direct influence is discernable when controlling for the latent constructs.[22] Consequently, adding the variable to the model did not increase explained variance in intention, but it shows that households that are already involved in tourism have a more favorable social surrounding and feel more able to enhance their tourism supply and therefore also have a higher intention of doing so. Unexperienced households, on the other hand, have lower values on the latent constructs and therefore also lower intention values.

This research has answered several questions, but others have been risen or are beyond the scope of this work and not all issues could be addressed. Information on income from other sectors than agriculture and tourism could provide insights into further sources of monetary income. It would also be interesting to address the question of gender equality, particularly in a collectivist country such as Georgia. However, focusing on households as the unit of analysis, this point was not taken into account here. Looking at the distribution of work within households could render information on who the driving force is when it comes to business decisions. Being aware of the costs both financially and in matters of time, research would greatly benefit from panel data from the regions and on the research questions addressed here. Regarding the socio-economic living conditions, panel data could show if there is an overall positive effect on household income from enhanced activities in

[20] Cf.: Armitage & Conner 2001.
[21] Fishbein & Ajzen 2010, pp. 203–206.
[22] Cf.: Fishbein & Ajzen 2010, pp. 226–253; Ajzen 2005, p. 134.

the tourism sector and maybe even a multiplier effect onto other households that are able to sell more agricultural products, either to tourists or other locals involved in tourism. Very interesting is also the question of whether households abandon agriculture in favor of tourism or if they diversify their activities and are active in both sectors. Using the Theory of Planned Behavior in a panel analysis would also be very beneficial and would allow several possibilities. One possibility that opens up when households are questioned a second time is the analysis of actual behavior. In order to examine actual behavior and the strength of the relationship between intention and behavior, it is necessary to record whether or not the households put their intentions into practice after the proposed time has elapsed (in this case after twelve months). Another possibility is to divide the sample into two groups and compare a treatment group to a control group. So after the first data collection, beliefs are analyzed and an intervention is designed to target significant beliefs in order to induce behavioral change. The treatment group is targeted by the intervention, e.g. affordable micro-credits, and after the follow-up survey, treatment and control group are compared to see if it was possible to actually change the behavior.

1.3 Structure of the Thesis

With an outline of the political changes that occurred during the past three decades, **Chapter 2** starts off by portraying the contemporary conditions that shape the operational framework in Georgia. With the break-up of the Soviet Union, the economic system in Georgia underwent a radical change from a socialist market economy to a free market economy which entailed the deconstruction of kolkhozes and sovkhozes. The chapter includes an account of the implications of the land reform for private households. The transformation of the agricultural sector caused a severe change in the use of land: whereas land use had been previously organized centrally by the soviet government, after the disintegration of the Soviet Union, private households used the assigned land in order to provide for their own imminent needs. These preconditions affect the scope of actions of the private households to be analyzed. Since the tourism sector remains important for the research areas, this sector is described for Georgia as well. After I present this general information on Georgia, facts and figures on Kazbegi and Borjomi give deeper insight into the regions surveyed. Available secondary data gives an idea of agricultural activities in the regions. Various research activities and international projects are and were carried out throughout Georgia in the years following its independence. Reports of and articles regarding these projects are explored for valuable information. The given facts and figures lead to the last part of Chapter 2 that deduces the research question at hand. With a focus on the individual actions of households, the Theory of Planned Behavior is used in order to formulate the key research question which in turn is supplemented by another research question that focuses on the importance of agricultural activities in the regions under examination. A third research question addresses possible starting points for interventions. Coleman's boat serves as a framework of actions for the relationship between the societal macro-level and the individual behavior on the micro-level.

Chapter 3 introduces the Theory of Planned Behavior (TPB) which serves as the theoretical framework for a large part of the ensuing empirical analyses in order to examine the households' intentions of becoming active (or increasing their activities) within the tourism sector to improve their livelihood. Rooted in the Theory of Reasoned Action, the TPB enhances the scope of application to behaviors that are not completely under volitional control. After introducing the theory in general,

the chapter turns to the practical application of the theory to the research objective at hand. Enhancing activities in the tourism branch within a set time frame is presented as the behavior under study. The next subsection shows the connection between the latent constructs and the manifest items in order to enhance the readers' understanding of the measurement of the psychological concepts of the theory. Following additional theoretical considerations, a moderation effect of perceived behavioral control – one of the theory's constructs – is proposed. Further aspects can serve as background factors which allow the incorporation of e.g. knowledge on the behavior or demographic variables into the TPB model which itself assumes that behavioral intention is directly explained by the proposed constructs while other variables serve as background factors which in turn influence the theory's constructs. Working in a cultural area that is less common for the application of the TPB than Western societies, special attention is given to the influence of cultural aspects on the relationships between proposed constructs. Having explained the TPB as the theoretical framework, the items that were formulated for the measurement of the latent constructs are derived in the next step. Since the cultural area is not typical for TPB applications, the collectivist nature of the Georgian culture is addressed.

Following the theoretical implications of Chapter 3, **Chapter 4** puts the explanations into testable hypotheses. The relationships between the core constructs serve as the overall structural model, which is supplemented by hypotheses on the creation of the constructs themselves, resulting in several measurement models that are both reflective and formative. The suggested moderation by perceived behavioral control results in a hypothesis on the comparison of structural coefficients and the integration of a background variable leads to a set of hypotheses designed to test mediational effects. The second part of Chapter 4 develops hypotheses independent of the TPB. In most cases, these hypotheses highlight the differences between the two research regions and between households from the main villages versus households from the smaller villages. Comparing the two regions helps to gain a differentiated look on what is characteristic of Kazbegi and Borjomi.

Chapter 5 turns to the empirical analysis of the data from the household survey in the two study regions of Kazbegi and Borjomi. Starting off with descriptive information such as age and number of household members, the first subsection gives an overview of basic sample characteristics before portraying the socio-economic living conditions in detail. Sources and amount of household income show the monetary situation of local households. Data on livestock, resulting animal products and land use emphasize the importance of agricultural production as a non-monetary income source for private households. Comparing the percentage of products sold with the percentage of products consumed personally, makes it clear that for a large majority of households in the research villages, agricultural production is not commercial, but rather just subsistence farming. Since some of the private households are also involved in tourism business, the chapter also looks at tourism in the regions. Subsection 5.4 analyzes the behavioral intentions of private households to enhance their activities in the tourism business with the theoretical model from the TPB and incorporates descriptive data on the involvement of households in tourism as a background factor. The hypothesized moderation and mediation are tested.

The discussion in **Chapter 6** summarizes the empirical findings from Chapter 5 and creates a coherent picture from the descriptive findings and the modelled behavioral intentions. The findings from the

application of the TPB are embedded into a cultural framework by comparing them to results from a meta-study. This chapter also addresses methodological issues and examines critical aspects regarding e.g. data quality.

By reviewing the empirical findings, the last chapter draws conclusions from the results. **Chapter 7** also attempts to formulate recommendations for starting points of interventions with the aim of fostering conditions for an enhancement of income-generating measures in the tourism sector. In this way, tourism is promoted as a viable economic option to the impoverished local farming activities.

2 State of the Art and Present Situation in Georgia

2.1 General Information on Georgia

Georgia is located between Eastern Europe and Western Asia, the Greater and the Lesser Caucasus ranges shape the valley that holds the lowland of Georgia. It is bordered by Russia in the north, Turkey and Armenia in the South and Azerbaijan in the Southeast. The western part of Georgia faces the Black Sea. The largest part of the country is covered by mountains (54 %), one third by foothill and the rest is lowland (13 %). The climate ranges from humid and subtropical at the seashore in the west to snowy high mountain climate in the north and mid-southwest. Traditionally, livestock and plant production play an important role for Georgia. About 43 % of the 67 900 km² of Georgia are used for agricultural purposes, one fourth of which is arable land while the rest is either pastures or hay lands. Especially in eastern Georgia, the soil is eroded due to water and wind erosion, causing almost 35 % of the agricultural land to be degraded.[23] This tendency is exacerbated due to anthropogenic influences. The degree of deforestation in Georgia is very high and makes soil erosion and landslides more likely, at the same time there are no strategies for a sustainable management of resources.[24]

After Georgia gained independence from the Union of Soviet Socialist Republics (USSR), it had to face a drastic reduction in gross domestic product (GDP) per capita like all other Commonwealth of Independent States (CIS) countries. However, like the other CIS countries it recovered from the drop in the second half of the 1990s.[25] The absolute amount of GDP has been rising since the beginning of the new century with only a small drop in 2009 (see Figure 1).

[23] Cf.: Urushadze & Ghambashidze 2013, pp. 78f. and 95.
[24] Cf.: Bertelsmann Stiftung 2012, p. 25.
[25] Cf.: Kötschau 2012, p. 11.

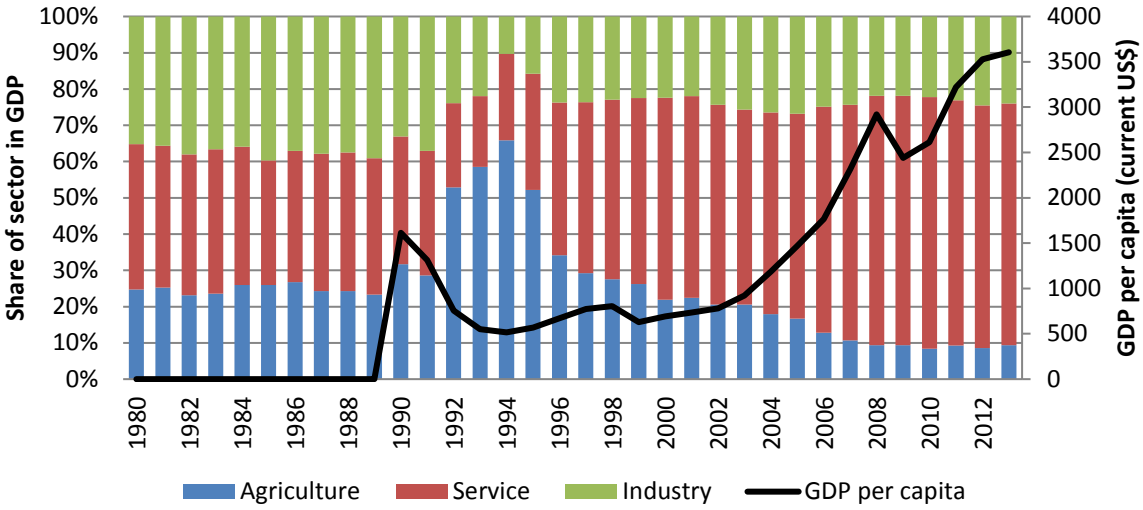


Figure 1: Composition and development of the gross domestic product of Georgia from 1980-2013 and 1990-2013 respectively

Note: GDP = gross domestic product. Source: Own presentation of data from the World Bank (2015a).

The importance of the agricultural sector rose when the soviet economy collapsed, allowing the population to provide themselves with food.[26] According to World Bank data, the share of the agricultural sector in the composition of the GDP of Georgia rose to over 60 % in the mid 1990's (Figure 1). In the years before the collapse of the Soviet Union, the share of agriculture had been rather stable at around 25 % and returned to this level at the turn of the century before dropping below 10 % in recent years. The service sector decreased in importance following Georgia's independence for some years, but in the last ten years, it has become more and more important and now accounts for the lion's share of the GDP with 67 % in 2013. When the agricultural sector started contributing a larger share to the composition of the GDP, the share from the industrial sector diminished. It rose a little in the second half of the 1990s and has been rather stable ever since. While both the share from the agricultural and the industrial sector have declined compared to before the disintegration of the USSR, the service sector is the only one that has gained in significance. Data on employment by sectors is only available from 1998-2007. During this time frame, the share of all three sectors hardly changed (see Figure 2). Considering that during the same time span the share of added value of agriculture in GDP fell from 28 to 11 %, the same amount of work force had to cope with a share in GDP that was less than half.

[26] Cf.: Plachter & Hampicke 2010, p. 444.

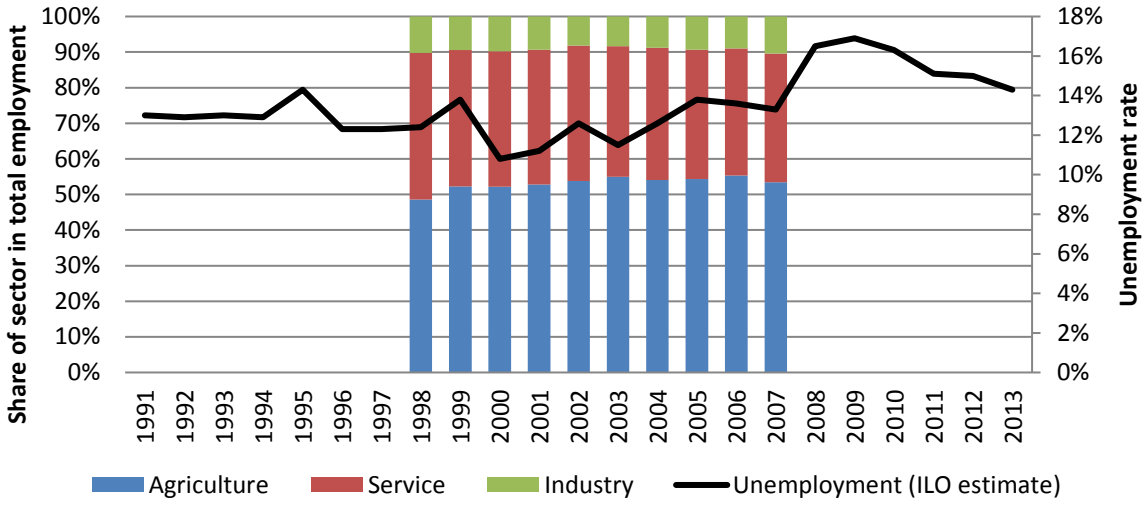


Figure 2: Employment by sector and unemployment rate from 1998-2007 and 1991-2013 respectively

Source: Own presentation of data from the World Bank (2015a).

Since the independence of Georgia unemployment was between 11 and 17 % of active labor force. For the year of the survey, the rate was at 15 %. The National Statistics Office of Georgia (GeoStat) reports unemployment rates for urban and rural areas separately. This data states that unemployment is considerably higher in urban areas than in rural ones with 27 and 7 % respectively.[27] When speaking about unemployment it is important to know that every person that owns at least one hectare of land is considered to be self-employed. In many cases these people consider themselves to be unemployed and only see agricultural production as a short-term activity. In this way, factual unemployment is underrated.[28] Although employment is higher in rural areas, average monthly household income, on the other hand, is lower for rural households than for urban ones.[29] There is a very basic social aid in Georgia that grants electricity subsidies, health insurance and a very low monetary aid if families are eligible for social aid according to a point system, but poverty is still a severe problem. This was furthermore aggravated by the war with Russia in August 2008 and the global financial crisis.[30] The distribution of income in Georgia is very uneven and the growing range between high and low incomes is increasing the income gap.[31]

Today the political leadership in Georgia has to cope with several structural difficulties, many of which are a consequence of the authoritarian rule that lasted several decades. The Georgian civil society is weak, there is a lack of political pluralism and the economy is not well adapted to globalization. The ongoing conflicts with South Ossetia and Abkhazia and the tense relationship with Russia furthermore exacerbate the difficulties of the country and its leadership. On the other hand, Georgia features an advantageous geographical location and a well-educated labor force. These

[27] Cf.: National Statistics Office of Georgia (GeoStat) 2015c.
[28] Cf.: Kegel 2003, p. 154; Bertelsmann Stiftung 2012, pp. 16–18.
[29] Cf.: National Statistics Office of Georgia (GeoStat) 2015b.
[30] Cf.: Bertelsmann Stiftung 2012, p. 23.
[31] Cf.: Gabidsaschwili & Gelaschwili 2007, pp. 12 and 17.

factors can help fostering a positive economic development.[32] Generally, Georgia is Western oriented and favors an accession to Western political unions and alliances such as the European Union (EU) and the North Atlantic Treaty Organization (NATO).[33]

2.1.1 Political & Economic Transformation

In the wake of the formation of the Republic of Georgia in 1991, the country has been struggling with the process of political and economic transformation. The first Georgian president was overthrown in a bloody revolt in 1992, the second president was able to persist until the so-called Rose Revolution in 2003 which resulted in democratic elections in 2004, making the Western-oriented Mikheil Saakashvili the third president.[34] He was able to solve one of three secessionist conflicts when Adjara was reintegrated into Georgia, thereby improving security in the country. But in the case of South Ossetia the actions taken by the government resulted in a war with Russia in 2008 that led to economic problems.[35] Before the war in 2008, Georgia had managed to attract much foreign direct investment which triggered notable economic growth. However, the loss of the Russian market as a consequence of the war is hard on the size of exports, particularly in the case of agricultural products, food processing and industry.[36] The earlier stages in the secessionist conflicts also had a negative effect on the economic development of Georgia, e.g. because of a number of internally displaced people who needed support. Structural problems, poor infrastructure and hyperinflation were problems Georgia had to face, just to name a few. With the introduction of the Georgian Lari (GEL) in 1995, the economy stabilized and the GDP began to grow. Structural reforms after the Rose Revolution improved business climate and led to a further growth in GDP.[37] Although Georgia has made considerable progress, there are also factors that undermine past positive developments. Saakashvili was reelected in 2008, but in the following years the government showed authoritarian tendencies and the gap between the rich and the poor has been growing. In 2012, the parliamentary elections were won by a new alliance named “Georgian Dream” which also won the presidential elections in 2013 with its candidate Giorgi Margvelashvili. An association and free trade agreement was signed one year later between the EU and Georgia.[38]

An important step towards democratic institutions is fighting corruption. For example raising the salaries of state officials such as judges or policemen and also a targeted change of personnel in certain positions reduced corruption significantly. Nevertheless personal relationships are still very important and it is questionable if democratic procedures are well-established in Georgia’s administration. Print media and television stations are influenced by the government to a certain degree, print media being more independent than television.[39] Georgia’s inability to overcome the existing patronage networks not only impedes democratic processes, it furthermore inhibits the development of democratically legitimized forms of self-organization. Even non-governmental

[32] Cf.: Bertelsmann Stiftung 2012, p. 27.
[33] Cf.: Salukvadze 2008, pp. 16f.
[34] Cf.: Chkoidze 2009, p. 59.
[35] Cf.: Chkoidze 2009, pp. 64f.
[36] Cf.: Bertelsmann Stiftung 2012, p. 25.
[37] Cf.: Chkoidze 2009, pp. 66f.
[38] Cf.: Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) 2010-2015.
[39] Cf.: Bertelsmann Stiftung 2012, pp. 8 and 10f.

organizations (NGOs) face distrust since there are NGOs that employ urban intellectuals who are driven by the wrong motivation instead of supporting the matters of those they are supposed to represent.[40] Although important amendments to the constitution have been made, the "process of consolidating democratic institutions is still [considered to be] far from complete"[41]. The president (from 2013 on the prime minister) appoints the regional governors and the municipalities have to rely on the central government for financial transfers since they do not have any fiscal authority.[42]

Georgia stands accused of ignoring civil rights regarding various aspects. Tax rules are somewhat arbitrary, property rights are violated, traders report of being extorted, the penitentiary system is known for its brutality and police uses excessive force against protesters.[43] A general problem for private persons who wish to make investments is the fact that interest rates are high. Banks and micro-financial institutions offer no reasonable conditions that would allow small-scale farmers or people active in the tourism sector to pay back a loan after the investment returns revenue.[44]

2.1.2 Land Reform & Land Policy Issues

The transformation process in Georgia was accompanied by a land reform that started one year after Georgia gained its independence. The land reform regulated the distribution of agricultural land that belonged to collective and state farms before 1991 to private households. This process has been ongoing for several years, but the performance of this process has been criticized. One example of the bad performance is that many small farmers still lack an official transfer certificate that legally completes the transfer. Without the certificate they are not able to sell the land or use it as collateral for a loan.[45] Biased and delayed registration procedures accompany the complicated bureaucratic structure and at least until before the Rose Revolution corruption was widely spread and a severe problem.[46] A report from 2011 states that 17 % of the agricultural land was registered at the time. With a fee of 50 GEL per agricultural land parcel, registration is not cheap (this does not include a cadastral survey of the land), especially if households need to register more than one parcel. Some people also do not see the necessity of registering their land since they themselves know the location of their parcels.[47]

The core objective of land reforms in former Soviet Union states was twofold: while productivity was supposed to increase, poverty was supposed to decrease by supplying private households with a means of generating income by cultivating agricultural land.[48] The land underneath individual houses was transformed into private ownership.[49] A family was able to receive a maximum of 1.25 ha of private property through the land reform if a family member had been employed in agriculture. The amounts of received land were less for families without a family member that had been employed in

[40] Cf.: Bertelsmann Stiftung 2012, p. 17.
[41] Bertelsmann Stiftung 2012, p. 14.
[42] Cf.: Bertelsmann Stiftung 2012, p. 14.
[43] Cf.: Bertelsmann Stiftung 2012, pp. 13f.
[44] Cf.: Bertelsmann Stiftung 2012, p. 18.
[45] Cf.: Gogodze, Kan & Kimhi 2007, pp. 1–4.
[46] Cf.: Ebanoidze 2003, pp. 129f.
[47] Cf.: Egiashvili 2011, p. 15.
[48] Cf.: Kötschau 2012, p. 165.
[49] Cf.: Ebanoidze 2003, pp. 127f.

agriculture and the maximum of land was up to 3 ha in mountainous areas. The way in which land was distributed is criticized because it lead to a high fragmentation of land parcels which show small sizes in many cases. However, it was on the other hand able to ensure food security and stabilized the political situation in the early 1990s.[50]

Part of the land that was not privatized is now community owned agricultural land. In most cases this land is pasture land and livestock grazing routs. Even though this land legally belongs to the state, it is permanently used by the villagers.[51]

An agricultural census in Georgia showed that land fragmentation is particularly evident in family holdings[52] whereas agricultural enterprises own larger pieces of land. Family holdings have an average of 2.3 parcels with an average size of 0.45 ha, agricultural enterprises own 3.1 parcels with an average size of 40 ha. The overall size of an average agricultural enterprise is 111 ha, opposed to an average family holding with 1.05 ha.[53] Specifically in the case of private owners, the cultivation of the highly fragmented arable land is unprofitable.[54]

2.1.3 Agriculture & Agricultural Development

As land was privatized in the wake of the breakdown of the Soviet Union, the agrarian structure in Georgia changed substantially. Enterprises were dissolved and households used the land they had been given through the land reform for the production of agricultural goods. In most cases, this production served subsistence purposes.[55] The majority of households consider agricultural production as a temporary situation until another source of income off farm can be found.[56] In the meantime, subsistence farming serves as an important economic and social buffer, especially in rural areas.[57]

Along with the land reform, agricultural producers changed the kinds of crops they cultivated. Since there were no more subsidies, processing equipment was lacking and the markets were disrupted, the private households replaced the high-value cash crops that the kolkhozes and sovkhozes had been producing by basic foods.[58] Traditional vineyards were turned into arable land to plant staple foods, thereby destroying values that had been built over years.[59] Private persons often lack knowledge on production strategies since they had other employments before the breakdown of the USSR. In some cases these people worked as industrial workers and have no experience in agricultural production.[60] In 1990, almost 100 % of wheat, barley, rye, oats and hay and 51 and 41 %

[50] Cf.: Kegel 2003, pp. 148f.
[51] Cf.: Egiashvili 2011, p. 25.
[52] The term “holding” is used in the official statistics of Georgia. The use of the term in this work does not abide by an agricultural definition of holding.
[53] Cf.: National Statistics Office of Georgia (GeoStat) n.d., p. 84.
[54] Cf.: Ebanoidze 2003, p. 133.
[55] Cf.: Kötschau, Sepashvili & Narimanidze 2009, p. 225.
[56] Cf.: Kötschau 2012, 167f.; Kegel 2003, p. 154.
[57] Cf.: Kegel 2003, p. 159.
[58] Cf.: Kötschau 2012, p. 13.
[59] Cf.: Kötschau, Sepashvili & Narimanidze 2009, p. 226.
[60] Cf.: International Fund for Agricultural Development (IFAD) 2004, p. 3.

of potatoes and vegetables respectively were produced by agricultural enterprises. Since the beginning of the 1990s, the share produced by family holdings increased, making them the main producer of grains, potatoes, vegetables, hay and melons with 93-100 % of the total production in 2014.[61] The first National Agricultural Census of Georgia from 2004/2005 showed that only 0.1 % of all holdings are agricultural enterprises and that 82 % of the holdings produce mainly for self-consumption. Agriculture is the main activity of the person operating the holding for 74 % of all holdings.[62]

Figure 3 shows the development of the numbers in livestock during the soviet regime and beyond. The numbers of pigs and also cattle were rising slightly during the time that Georgia was part of the USSR. The numbers of sheep and goats fluctuated more than in the case of cattle and pigs, but they also remained comparatively high during the same time period. At the beginning of the 1990s, all graphs bent downward. While there are still more sheep and goats than pigs, sheep and goats experienced the most severe decline in numbers.

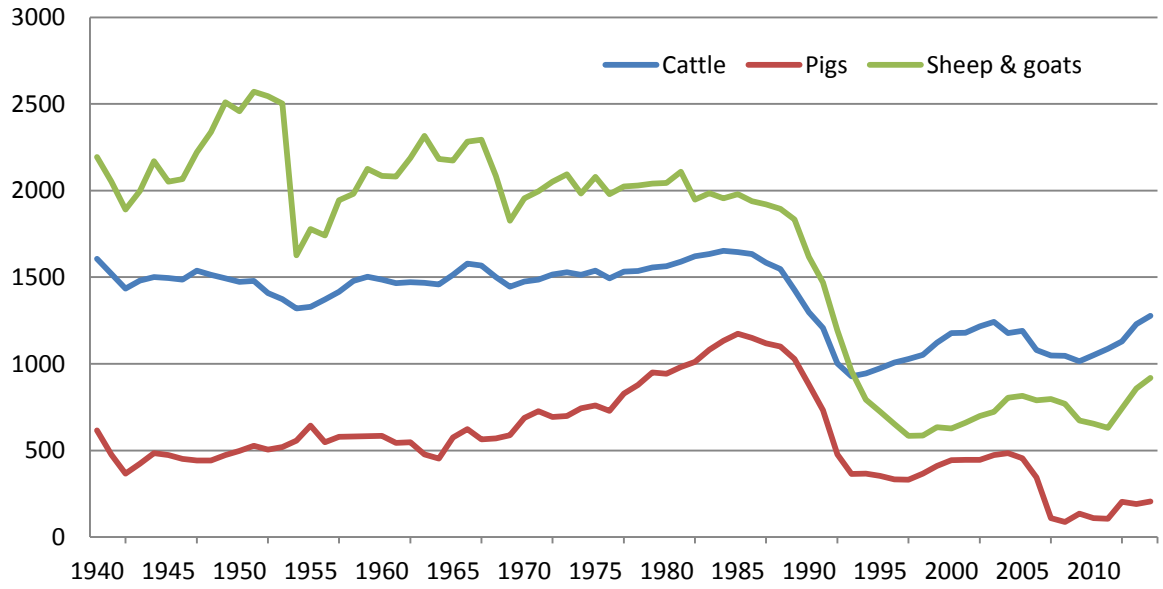


Figure 3: Livestock numbers for Georgia (1940-2014) in holdings of all categories (in thousands)
Source: Own presentation of data from National Statistics Office of Georgia (GeoStat) (2015a, p. 57).

Although many private households (specifically in rural areas) are engaged in agricultural activities, the majority of them is not working in a market oriented way. Their objective is to grow basic food products that are needed for the preparation of meals for the family. Even in cases where production exceeds the needs of the family, it is hardly enough to pay the hired workers in kind and to supply the needed inputs. Aside from selling surplus production, it is also common to barter goods. Since the food processing industry collapsed completely, it is very challenging to market agricultural products. This is also true for products such as tea, wine and fruits that were traditionally produced

[61] Cf.: National Statistics Office of Georgia (GeoStat) 2008, p. 35, 2015a, p. 32.
[62] Cf.: National Statistics Office of Georgia (GeoStat) n.d., pp. 3, 27 and 24.

in Georgia.[63] During soviet times, in most cases at least one household member was working on a kolkhoz or sovkhoz, but they were mainly following assigned tasks on these state and collective farms. They often lack knowledge on productive farming techniques and it is also difficult for them to consider themselves a "farmer".[64]

2.1.4 Tourism Sector

During the last years the tourism sector has gained in importance and has developed into the primary driver of GDP growth under the last Georgian president Mikhail Saakashvili.[65] The Government of Georgia has been promoting investments in tourism, infrastructure and export development during the last years.[66] Data from 2008 to 2014 shows that the numbers of guests has been rising constantly from 266 277 to 1 391 449, signifying an increase by more than five times as many in only six years. In that time frame, the countries of origin shifted. While 61 % of all visitors came from Georgia in 2008, the amount of foreign visitors grew steadily, amounting up to 62 % of tourists from foreign countries in 2014. The number of visitors from European countries has been rising constantly throughout this time period, their share in the visitors from foreign countries generally has declined from 45 % to 36 %.[67]

In 2005, the government of Georgia adopted the law on "amendments and supplements to the law of Georgia on temporary entrance to, residence in and leaving of Georgia by foreigners" which simplifies visa procedures. Citizens from the EU, USA, Canada, Japan and Israel do not need a visa to visit Georgia and a bilateral agreement was reached with neighboring Turkey.[68] The tourism sector is considered a promising business branch. Georgia has a lot to offer with a rich history, beautiful nature, famous cuisine and untouched flora and fauna. Conditions for entering Georgia are favorable for many countries from the EU and Central Asia regarding both visa regulations and also the distance (but prices for plane tickets are not cheap). The government supports and promotes the tourism sector and Georgia also offers niche tourism in the fields of e.g. wine or adventure. On the other hand, there are still many points that need improvement. Although the government is working on an improvement of basic infrastructure, broken roads, a lack of signs and bad sanitary conditions in public restrooms can still be found all over the country. Most of the tourists are national and when Western tourists find their way to Georgia, their quality standards are often not met. Oftentimes tourists only spend a small amount of time in Georgia. Enhancing the time tourists spend in the holiday destinations could enhance the benefits of the local economies gained from tourism. Ranking system for e.g. accommodation and restaurants could make it easier for Western tourists to find a place that meets their needs and expectations.[69]

Further tourism branches that offer development in Georgia are e.g. the wellness industry, agro- and ecotourism. There are spa centers in Georgia, as well as good possibilities for the cultivation of

[63] Cf.: Kegel 2003, pp. 152f.
[64] Cf.: Janowski 2003, pp. 9f.
[65] Cf.: Jamestown Foundation 2013.
[66] Cf.: Bertelsmann Stiftung 2012, p. 19.
[67] Cf.: National Statistics Office of Georgia (GeoStat) 2013b, p. 211, 2015f, p. 211.
[68] Cf.: World Bank 2006a, p. 47.
[69] Cf.: United States Agency for International Development (USAID) 2012b, p. 8.

organic products which can in turn attract tourists. Various national parks exist in Georgia. They are important in order to preserve biodiversity and are therefore interesting destinations for tourists.[70] Ecotourism is often thought of in connection with national parks and protected areas, but ecotourism activities can also take place elsewhere. Furthermore, the development of ecotourism in a national park can also have a positive effect on the surrounding villages by reducing the need for other more damaging activities to generate income (e.g. illegal logging). The country is not yet making full use of its potential of ecotourism in national parks.[71]

The overall positive development of the tourism sector suffered after the war in August 2008. The numbers of tourists dropped severely and travel agencies had to reduce prices in order to attract tourists at all. Georgia is furthermore struggling to keep up with Turkey – its main competitor for tourists. Turkey also shows low prices and has a higher level of services to offer.[72]

2.2 Specific Information on the Study Regions

Information on the circumstances of agricultural activities in Georgia are a necessary foundation of a thorough analysis of socio-economic living conditions of rural Georgian households. The analysis will focus on two areas in particular. Both areas are mountainous at an elevation of approximately 1 700 m a.s.l. and located in the Caucasus. Kazbegi is situated in the Greater Caucasus bordering Russia, Borjomi is situated in the Lesser Caucasus.

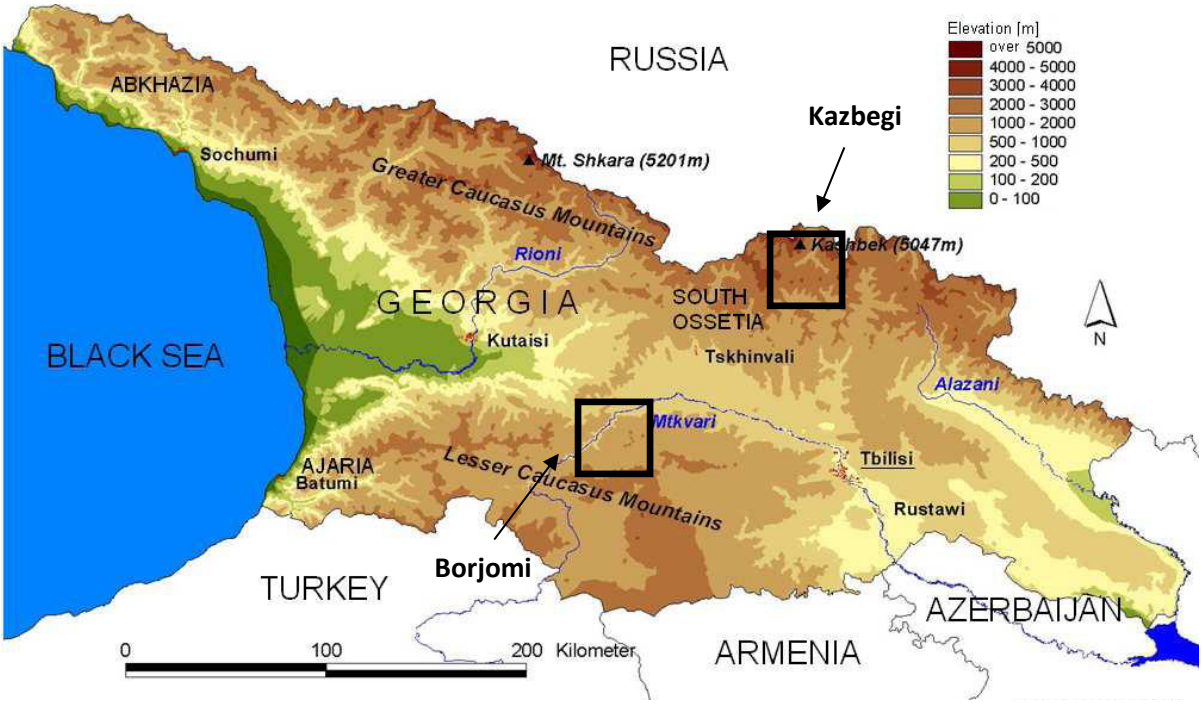


Figure 4: Physical Map of Georgia with the location of the study areas

Source: Modified from Gavardashvili, Schaefer & King (2007, p. 6).

[70] Cf.: Erkomaishvili, Gvelesiani, Kharaishvili & Chavleishvili 2014, p. 178; Khardzeishvili 2009, pp. 515 and 521f.
[71] Cf.: International Union for Conservation of Nature (IUCN) 2008, pp. 13 and 22.
[72] Cf.: Erkomaishvili, Gvelesiani, Kharaishvili & Chavleishvili 2014, pp. 177f.

The research areas were chosen by an interdisciplinary team of scientists in the framework of the joint research project "Analysing Multiple Interrelationships of Environmental and Societal Processes in Mountainous Regions of Georgia" (AMIES).[73] While the interdisciplinary approach of the project brings together scientists from fields such as landscape ecology, geography and social sciences, this work focuses on an analysis of the socio-economic living conditions of private households and their behavioral intentions regarding activities in the tourism sector. The selection of two research areas that share some common features but also differ regarding other aspects allows for a comparison of several key aspects. For example, both research regions show a number of households that are active in the tourism sector, but differ with regard to the time span of their respective activity in tourism. In order to satisfy various needs of researchers from different fields, the research areas could not follow simple administrative borders. Therefore, the Kazbegi region includes one village (i.e. Mleta) that is located just outside of the administrative borders of the Kazbegi municipality. In the case of the Borjomi region, the research villages do not include the main town of the Borjomi municipality which is also called Borjomi. The villages that were chosen for the quantitative household survey were selected in agreement with the project partners. They are listed in the following table.

Table 1: Research villages

	Municipality / District	Population (Census 2002)
Kazbegi, Mtskheta-Mtianeti Region		5261
Stepantsminda (+ Gergeti)	Kazbegi	1783
Sno	Kazbegi	418
Kanobi	Kazbegi	182
Juta	Kazbegi	62
Mleta (Dusheti district)	Dusheti	313
Borjomi, Samtskhe-Javakheti Region		32422
Bakuriani	Borjomi	1985
Tsikhisjvari	Borjomi	644
Bakurianis Andeziti	Borjomi	514
Didi Mitarbi	Borjomi	48
Tsagveri	Borjomi	1051

Source: National Statistics Office of Georgia (GeoStat) (February 2013).

One larger settlement was chosen within each of the two research regions. In the case of Kazbegi, the center of the Kazbegi municipality, i.e. Stepantsminda, was chosen. For the Borjomi municipality Bakuriani was interesting for the research objective because households have been active in the tourism sector for quite a while. In addition to these larger settlements, small villages were chosen in each of the regions. Four to five smaller villages were selected to be able to also take into account socio-economic living conditions outside the regional centers. The choice of sample villages allows

[73] The project was funded by the VolkswagenStiftung and carried out by researchers from Justus Liebig University Giessen in cooperation with Ilia Chavchavadze State University (Tbilisi) and Ivane Javakhishvili Tbilisi State University between 2010 and 2013.

comparing the situation between two regions and also within the regions between local centers and smaller villages.

During 2011 (the year of the survey), average monthly household income (including transfers) of the regions Samtskhe-Javakheti, Mtskheta-Mtianeti and Guria (444 Georgian Lari, GEL) was lower than the average for Georgia (512 GEL).[74] Even though the cash income for those regions constantly rose from 2011-2014, the gap to Georgia in total increased. Until 2013, the gap increased up to 161 GEL per month and fell slightly to 134 GEL in 2014.[75] Background information on possible sources of income is therefore important for the research areas. According to the first National Agricultural Census of Georgia from 2004/2005, all of the holdings[76] in the Kazbegi district are characterized as family holdings, in the Borjomi district 0.1 % of the holdings are agricultural enterprises while the rest of the holdings are family holdings as well (in Georgia as a whole 99.8 % are family holdings and 0.1 % are agricultural enterprises). Similar to overall Georgia, 80 % of the holdings in Kazbegi produce mainly for self-consumption (82 % in Georgia) and 20 % produce mainly for selling (19 % in Georgia). In Borjomi, 97 % produce mainly for self-consumption, in contrast to 2 % that mainly sell. In Georgia, agriculture is the main activity of the person operating the holding in 74 % of the cases. For Kazbegi this value is even higher with 88 % while it is considerably lower for Borjomi with 38 %. The average amount of land parcels owned per family holding is slightly higher in both the Kazbegi and the Borjomi region than in Georgia (2.6 versus 2.3). In Kazbegi both the average size of a holding (0.45 ha) and the average size of a land parcel (0.17 ha) is lower than for the whole country (1.05 and 0.45 ha respectively). In Bakuriani, holdings and parcels (1.31 and 0.5 ha respectively) are slightly larger than the national average. Figure 3 shows that the number of livestock in Georgia declined from the beginning of the 1990s on. The National Agricultural Census of Georgia states that in 2004/2005 there were 4 311 and 7 779 bovines, 1 593 and 2 127 pigs and 18 991 and 4 365 sheep in the Kazbegi and the Borjomi district respectively. Family holdings keep 9 081 chicken in Kazbegi and 20 609 chicken in Borjomi.[77]

As can be seen in Figure 4, both research regions are not in the vicinity of the capital Tbilisi. There are notable differences between rural and urban areas regarding access to infrastructure services.[78] The road network leading to the research areas is (or was) problematic in some cases.[79] In order to reach Kazbegi, the Jvari pass (2 379 m a.s.l.)[80] needs to be crossed. Particularly in winter this can be difficult due to the snow. A World Bank report from 2006 states that in most communities, the road network

[74] On July 1st in 2011, the exchange rate was 1 GEL = 0.415 € (OANDA 2011). With this exchange rate, 444 GEL equal 184,26 € and 512 GEL equal 212,48 €.
[75] Cf.: National Statistics Office of Georgia (GeoStat) 2015e.
[76] The term "holding" is used in the official statistics of Georgia. The use of the term in this work does not abide by an agricultural definition of holding.
[77] Cf.: National Statistics Office of Georgia (GeoStat) n.d., pp. 3-5, 27-29, 24-26, 84-86, 222f., 225f. and 228f.
[78] Cf.: Bertelsmann Stiftung 2012, p. 24.
[79] The road of the Jvari pass leading into Kazbegi was repaired in late 2013. At the time of the survey in 2011 the conditions of that road were considerably worse than after the road works.
[80] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, p. 14.

is in very poor or poor condition and the majority of roads is unpaved. The bad conditions of the roads limit the possibilities of commercialization of agricultural products.[81]

2.2.1 Kazbegi Region

The Kazbegi district covers an area of 1 082 km².[82] It is of political interest because it holds the only Georgian border check point with Russia that is not located in one of the autonomous republics of Abkhazia or South Ossetia. This makes the Georgian military road an important route of transport for goods, also connecting Armenia and Russia via Kazbegi.[83] It was closed from July 2006 until March 2010[84], stopping the trade relations with Russia.

The region is characterized by harsh natural conditions due to the high elevation, uneven topography and long winters with a staple snow cover for three to five months up to an elevation of 1 900 m a.s.l. Industry and social infrastructure are hardly developed and areas for agriculture are scarce. 90 % of the people are ethnic Georgians. Some inhabitants work in state institutions but more people are self-employed, either in livestock farming or in seasonal tourism. 40 % of the land in Kazbegi can be used for agricultural purposes, while 85 % of the land in whole Georgia is suitable for agricultural purposes. Livestock farming was a traditional economic activity in the region. Most important in this regard was sheep breeding for the production of milk, wool and meat. Since the independence of Georgia in 1991, sheep husbandry has declined from 120 000 to 20 000.[85] Despite the decline in animal numbers, 80 % of the population is considered to be involved in animal husbandry which also denotes the most important field of agriculture. Sheep and cattle are partly nomadic and are brought to pastures in central regions of Georgia for winter. The region itself lacks processing enterprises such as dairy processing[86], the value chain of dairy production is inefficient and there are large gaps in demand and supply. Poor nutrition of cows (due to insufficient arable land) and lack of knowledge lead to low milk production.[87] Private households often keep some chickens, pigs and cattle. Field crops and potatoes are grown by private households, along with vegetables in some cases. These are mostly used for self-consumption[88], few households grow potatoes in order to sell them. The average plot size of a household in Kazbegi is 0.43 ha (with 0.08 ha cultivated with potatoes on average).[89] Subsistence agriculture is prevalent, specifically in small villages. Production in greenhouses stopped several years ago when gas for heating the greenhouses was no longer free and the border to Russia was closed. The industrial sector has never been important in the Kazbegi region.[90] Ancient lynchets

[81] Cf.: World Bank 2006b, pp. 37–39; Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 31.
[82] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, p. 13.
[83] Cf.: Jamestown Foundation 2013.
[84] Cf.: BBC News 2010.
[85] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, p. 21; Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010a, p. 49.
[86] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010a, pp. 49 and 52.
[87] Cf.: United States Agency for International Development (USAID) 2012a, pp. 15–17.
[88] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, pp. 21-23 and 15.
[89] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010a, p. 49.
[90] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, pp. 21-23 and 15.

(e.g. in Juta) are a sign of the use of steep slopes for the cultivation of crops some decades ago. The fact that common cereal weeds can still be found is an indication of the cultivation of barley and wheat in former times. Today people mostly cultivate potatoes and some vegetables on a small scale.[91] In an analysis of the change in land cover around Stepantsminda for three points in time (1971, 1987 and 2005/2011), Theißen (2011) found that pastures covered the largest share of the area and was very stable at all points in time. These pastures are mostly not fenced and used for grazing by livestock. Woody vegetation is expanding, transforming some of the pasture from 1971 into shrubs in 2011. Fenced meadows for hay making constitute the second largest land use type while arable land only covers a small share of the area.[92]

During soviet times, the Kazbegi region featured several large-scale soviet hotels and tourism was a major business in the region. It had become a mountaineering center and was well-known for its nature and mountain sports activities. However, the facilities from that time are now run-down and due to uncontrolled tourism, the landscape and ecosystems suffered damages. Today, tourists are drawn to the Kazbegi region mainly because of its nature[93] (e.g. the Mount Kazbeg, 5 047 m a.s.l.[94]), sports activities and cultural sites (e.g. the Holy Trinity Church above Gergeti). International tourists mostly come from Israel, but there are also tourists from Germany, the Baltic countries, Poland, the Czech Republic and France. Tourism operators in the region note that there is a lack of regulations and restrictions. Also the infrastructure of basic needs of tourists is incomplete.[95] By and large, the potential of the tourism sector is considered high, but as a seasonal phenomenon.[96] The number of tourists is increasing: in 2010 there were 23 126 tourists in the Stepantsminda municipality and in 2011 there were 36 647 tourists.[97] Approximately 70 % of the tourists are of Georgian nationality.[98] Compared with other mountainous regions in Georgia, Kazbegi is relatively close to the capital Tbilisi. Stepantsminda can be reached in approximately three hours (149 km) and is also reachable with public transport several times a day for 15 GEL (≈ 6 €).[99] One year after the household survey that serves as the data base for this work, a large hotel (with 150 rooms eventually) opened in Stepantsminda. This example shows that tourism can also have negative effects on the area since sports activities that are offered by the hotel (e.g. using quad bikes) are likely to lead to erosion and harm the environment.[100]

The shortage of job opportunities in the Kazbegi region is a general economic problem. Young people leave the region in order to study or work in larger cities, thus drawing work force from the aging

[91] Cf.: Tephnadze, Abdaladze, Nakhutsrishvili et al. 2014, p. 277.
[92] Cf.: Theißen 2011, pp. 28 and 39-42.
[93] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, pp. 25–28.
[94] Cf.: United States Agency for International Development (USAID) 2012b, p. 10.
[95] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, pp. 25–28.
[96] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010b, p. xii.
[97] Cf.: United States Agency for International Development (USAID) 2012b, p. 6.
[98] Cf.: United States Agency for International Development (USAID) 2012b, p. 12.
[99] Cf.: United States Agency for International Development (USAID) 2012b, p. 10.
[100] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2012, pp. 22–25.

population which is needed to maintain (or even expand) agriculture and the rural market economy.[101]

2.2.2 Borjomi Region

The Borjomi district, located in the Lesser Caucasus, covers an area of 1 189 km², 53 % of which are forested.[102] Bakuriani, the largest village from the Borjomi district that was included in the survey, is located 179 km from Tbilisi. Compared to other districts in the Samtskhe-Javakheti region, Borjomi shows a lack of arable land and the size of plots is the smallest. According to the Borjomi municipality, 80 % of the population carries out non-commercial agriculture at a small scale with typically two to three cows per family and the production of potatoes for self-consumption.[103] The plot sizes of the Samtskhe-Javakheti region are mostly between 0.5 and 1.5 ha with an estimated average of .93 ha in Samtskhe which includes the Borjomi municipality.[104] More than 5 000 cattle and approximately 10 000 sheep were reported for the Borjomi district in 2011. Difficulties regarding animal husbandry arise because of a lack in veterinary services and high prices of fodder.[105] Farmers in the Samtskhe-Javakheti region also lack knowledge on livestock breeds and artificial insemination is hardly practiced. This impedes productivity and health of the animals.[106] It is also common to keep bees[107] or to collect and sell timber which is often logged illegally.[108] In the 1990s, pasture land was distributed to the households, but many farmers do not know the location and the exact size of their plots. Today, the demand for pastures is large and overgrazing is widely spread.[109] Due to the high fragmentation of land and small plot sizes subsistence agriculture is very common. A survey in Tsagveri found that people lack agricultural machinery and that the prices of fertilizers are high.[110] Inhabitants of the village Didi Mitarbi report that villagers recently emigrated from the village. The locals gather their cattle and bring it to pastures farther away from the settlement. This practice differs from that in Bakuriani and Bakurianis Andeziti.[111]

Aside from agricultural activities, tourism plays an important role for the socio-economic living conditions of the population in Borjomi. It is probably more important than agriculture. Borjomi is the tourism center of the Samtskhe-Javakheti region and Bakuriani features a well-developed skiing infrastructure with approximately 60 hotels. The number of local and foreign tourists is increasing.[112] Several websites report that Bakuriani became a skiing region in 1932 and during soviet times it became a training center for athletes. Today there are ski lifts, ski jumps and toboggan runs. The mountain air in Bakuriani is said to have a curative effect and the climate is milder than in the skiing

[101] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010b, p. xii f.
[102] Cf.: Forest Law Enforcement & Governance (FLEG) 2010, p. 6.
[103] Cf.: Borjomi Municipal Working Group 2008, 9ff.; Caucasus Research Resource Center (CRRC) 2007, p. 12.
[104] Cf.: Caucasus Research Resource Center (CRRC) 2007, pp. 11f.
[105] Cf.: Ecovision – Union for Sustainable Development 2011, pp. 7 and 16.
[106] Cf.: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) 2013, p. 14.
[107] Cf.: Ecovision – Union for Sustainable Development 2011, pp. 7 and 16.
[108] Cf.: Forest Law Enforcement & Governance (FLEG) 2010, pp. 6–8.
[109] Cf.: Borjomi Municipal Working Group 2008, pp. 9–11.
[110] Cf.: Ecovision – Union for Sustainable Development 2011, p. 16.
[111] Cf.: Rauner 2013, pp. 57f.
[112] Cf.: Borjomi Municipal Working Group 2008, pp. 11–13.

resort Gudauri (on the border of the Kazbegi region, but not part of the study region) so that summer tourism is possible as well.[113] Smaller villages in the Borjomi region such as e.g. Tsagveri attract tourists in summer. The image of the region has suffered a little since the five-day war in August 2008 in which parts of the forests were (severely) damaged.[114] Despite the fact that the tourism industry in the Borjomi region started about 80 years ago, the general tourism infrastructure is not well developed.[115]

In the three years prior to the year of the survey (2011), the incomes of the Borjomi municipality have decreased by more than half from 9.55 million GEL to 4.14 million GEL.[116]

2.3 Projects, Research Activities and Empirical Data in (and on) the Regions and Beyond

2.3.1 Projects

During the years following the break-up of the Soviet Union Georgia has received and is still receiving financial and developmental aid from various countries and organizations. These have fostered the transformation of the country in both political and economic terms by implementing a large number of small and large projects with varying length. One actor that has been engaged in stabilizing the situation in the whole Caucasus region is the German Federal Ministry for Economic Cooperation and Development (BMZ). Whereas activities at the beginning were mostly emergency assistance, a development partnership is now in place that looks at regional needs. The Caucasus Initiative was organized by the BMZ to support Georgia, Azerbaijan and Armenia during the countries' political, economic and social transformation.[117] Many development aid projects carried out by various actors focus on transportation, water, sanitation and flood protection as well as energy and mining.[118] Several projects (e.g. by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)) also worked on the development of cadasters and an improvement of the legal framework of land ownership.[119] Since tourism is a prospering business branch, some agencies also carry out projects for nature conservation and in order to promote Georgia as a holiday destination.[120] The German Development Bank (KfW) for instance was involved in the publication of a brochure on protected areas in the Southern Caucasus. KfW is also active in the banking sector by supplying loans to small and medium enterprises especially since 1999. Their aim is to contribute to a stable market-based financial sector.[121]

Development programs with numerous objectives are carried out all over Georgia. Among other projects in Georgia, the United States Agency for International Development (USAID) carried out

[113] Cf.: Georgian-Voyge 2014-2015; Bakuriani Resorts 2014; Bakuriani-Ru n.d.
[114] Cf.: Ecovision – Union for Sustainable Development 2011, pp. 6 and 17f.
[115] Cf.: Borjomi Municipal Working Group 2008, p. 21.
[116] Cf.: Ecovision – Union for Sustainable Development 2011, p. 4.
[117] Cf.: Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) 2010-2015.
[118] Cf.: World Bank 2015b.
[119] Cf.: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) n.d.
[120] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2013.
[121] Cf.: ProCredit Bank 2015.

projects in the research region Kazbegi, investigating livestock and tourism. With regard to livestock, one of their project reports suggests to increase knowledge of the farmers and to foster supply of services and input. It is also deemed important to start artificial insemination in order to improve the gene pool of the local breeds. The improvement of infrastructure is important for the enhancement of tourism, as well as the improvement of professional and service skills and the establishment of linkages between stakeholders in tourism and local agricultural producers.[122] In the case of Borjomi, there is a project focusing on the mountain forests and climate in the region. The project is carried out by an Austrian organization with the aim of fostering a sustainable development of the ecosystem forest, thereby securing the livelihood of the local population since many people are involved in forestry.[123] There is also information on a planned water and wastewater project in Borjomi. Using a grant from the European Bank for Reconstruction and Development (EBRD), the water delivery services and the treatment of waste water in Bakuriani and Borjomi are supposed to be improved.[124]

2.3.2 Research Activities

The research interests in Georgia follow very diverse topics and research questions. Due to the comparatively recent independence, political scientists take a keen interest in Georgia and the other post-soviet countries.[125] In many cases, the topics are related to the transformation process from a communist republic into a democratic nation state[126], the importance of agriculture and subsistence farming[127], the change in land use[128] and the effects of the land reform[129]. Georgia's diverse landscape with many endogenous plant species makes the country also a popular destination for natural scientists that seek to explore the biodiversity hot-spot Georgia.[130] Research was already conducted during soviet times, e.g. on intensive grazing of sheep.[131] In the more recent past, geographers have also conducted research on migration and population trends within Georgia and to outside countries.[132]

While part of the conducted research focuses on Georgia as a whole, there are also a number of case studies that concentrate on particular areas. Schulze, Tillack & Mosashvili (2003) analyzed the economic living situation of 200 family farms in the Sighnagi district (Kakheti region). They found that about three quarters of the holdings return no or very little monetary output.[133] Also in 2003, a case study among agricultural enterprises in the Khashuri district (Shida Kartli) concludes that the largest part of the agricultural activities is carried out in order to provide for the needs of the households. Kegel argues that particularly in the rural areas, this subsistence agriculture is needed as an economic

[122] Cf.: United States Agency for International Development (USAID) 2012a, 2012b.
[123] Cf.: Bundesforschungszentrum für Wald (BFW) 2014.
[124] Cf.: Devex 2016.
[125] Cf.: King & Xubua 2009.
[126] Cf.: Chkoidze 2009; Chanturia 2009.
[127] Cf.: Kegel 2003; Kötschau, Sepashvili & Narimanidze 2009.
[128] Cf.: Didebulidze & Urushadze 2009.
[129] Cf.: Kötschau 2012; Lerman 2006; Csaki & Lerman 1997; Ebanoidze 2003; Egiashvili 2011.
[130] Cf.: Akhalkatsi, Ekhvaia & Asanidze 2012; Tephnadze, Abdaladze, Nakhutsrishvili et al. 2014.
[131] Cf.: Körner 1980; Cernusca & Nakhutsrishvili 1983.
[132] Cf.: Rowland 2006; Radvanyi & Muduyev 2007.
[133] Cf.: Schulze, Tillack & Mosashvili 2003.

and social factor to overcome the transition period.[134] Some years later, Kötschau, Sepashvili & Narimanidze (2009) used data from Shida Kartli as well and come to the conclusion that the privatization of land provided a social safety net after the independence of Georgia, but today the agricultural sector lacks overall economic growth and rural infrastructure, access to markets and credits are needed to transform the agricultural sector into a functioning commercial sector.[135] Haerdle & Bontjer (2010) specifically looked at the change in cattle stocks of households in an area 30 km north of Tbilisi. Most families in Sages did not own any cattle in 1990, but do now. Other households that had cattle before have increased the amount in the meantime, but the yield is hardly enough for subsistence.[136]

2.3.3 Empirical Data on Georgia

The National Statistics Office of Georgia (GeoStat) offers much data on Georgia online.[137] Data on economic indicators such as GDP, price index, external trade and employment can be downloaded. Other data focuses on education and culture, healthcare and social protection, businesses, wages and standard of living, to name a few. A point of special interest for this work is the agricultural sector. In 2004, Georgia carried out an agricultural census, the main results of which are also available online. As in the case of the other data provided on the homepage of GeoStat, the data is in most cases presented for each region individually. Oftentimes some regions are subsumed in the category "other regions". Many times when this category appears it includes the two research regions Kazbegi and Borjomi.

Secondary data is also available from organizations such as World Bank, Food and Agriculture Organization (FAO), Bertelsmann Stiftung, Organisation for Economic Co-operation and Development (OECD), International Labour Organization (ILO) or International Monetary Fund (IMF). In most cases the data gives overall numbers for Georgia as a whole, e.g. information on employment or gross domestic product (GDP). In other cases an assessment of the transformation process can help to understand the political and economic transformation status of Georgia. Data is usually available on a general level that allows for comparisons with other countries or cultures, but the data does not differentiate between regions or areas within the country. A report by the Cooperative for Assistance and Relief Everywhere International (CARE) (2010) also mentions this problem. International organizations summarize small communities because of their very small populations as well.[138]

Other empirical data can be found in both scientific research and development projects. Since these projects often focus on specific areas or regions within Georgia, they provide detailed information on a very specific population which is often limited to one or several villages. Household surveys are very common for the analysis of socio-economic research questions. The data is often gathered for a specific project and includes the information needed for the specific purpose of the project or

[134] Cf.: Kegel 2003.
[135] Cf.: Kötschau, Sepashvili & Narimanidze 2009.
[136] Cf.: Haerdle & Bontjer 2010.
[137] Cf.: National Statistics Office of Georgia (GeoStat) 2015d.
[138] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, pp. 30f.

research question.[139] Project reports of international organizations often rely on governmental data (e.g. provided by GeoStat) and information from local municipalities to develop their recommendations.[140] In some cases, international programs also conduct household surveys to gather their own data.[141]

2.4 Research Gap

The fact that since 2008 the share of agriculture in Georgia's GDP has been less than 10 % while the share of people working in the agricultural sector is above 50 % since the beginning of the new century shows that a large amount of workers has to share a small amount of generated GDP (compare Figure 1 and Figure 2). Several sources mention that many people do not choose to carry out agricultural activities, but do so because of a lack of alternatives.[142] Taking into account the economic developments that show the unprofitability of the Georgian agricultural sector and the increasing poverty gap between rural and urban areas, it is important to focus on rural areas that suffer more severely from a lack of employment opportunities and perspectives for a brighter future. Furthermore considering personal preferences of the people who often do not consider themselves to be farmers and are only carrying out agricultural activities to make ends meet, it is reasonable to consider other sources of income in addition to agricultural activities.

Two rural areas in mountainous regions of Georgia (see Chapter 2.2) were chosen to study individual agricultural activities and activities in a rather new business branch, namely tourism. The research areas are exemplary for other mountainous regions of Georgia such as Svaneti in the northwest or Tusheti in the northeast which also have to rely on agricultural production for subsistence use and add activities in the tourism sector to enhance their income. Certain peculiarities of the regions Kazbegi and Borjomi have been outlined and will be taken into consideration during the analysis and interpretation of results. By using data from two regions it is possible to see if the same effects can be found for both populations or if there are differences that indicate that results are region-specific. It is the aim of this research to take a look through the magnifying glass to describe and understand the living conditions of private households in the two research areas and to analyze the determining factors of their intentions to enhance or start activities in the tourism sector. Looking at the situational conditions of the households and combining this information with an analysis of the underlying beliefs that are the informational foundation of driving factors of behavioral intentions regarding such an enhancement will show what the private households in the regions lack or what keeps them from extending tourism activities as a source of income. Although a large amount of secondary data is available from the National Statistics Office of Georgia and organizations such as the World Bank, data often lacks the in-depth information needed here. It is furthermore necessary to be able to connect the quantitative data on e.g. agricultural activities directly to the foundation of intentions of the single households to integrate the data for analysis. A quantitative household

[139] See for example the studies conducted by Kötschau 2012; Kegel 2003; Haerdle & Bontjer 2010; Schulze, Tillack & Mosashvili 2003.
[140] This can for instance be seen in World Bank 2006b; United States Agency for International Development (USAID) 2012a, 2012b.
[141] As can be seen in Ecovision – Union for Sustainable Development 2011.
[142] Cf.: Kötschau 2012, pp. 167f.; Kegel 2003, p. 154.

survey among inhabitants of the research areas will deliver the required data. While this data is collected on a micro-level, it relates back to the macro-level of the populations of the research areas. In his macro-micro-macro-model, Coleman (1990) described how the macro-level of society as a whole and the micro-level of singular social actions performed by individuals are connected. According to Coleman's boat, a situation that is present on the macro-level is connected to and influences the situational conditions of the individual on the micro-level. The individuals of a given society or target population each make their single decisions and take action. Those individual behaviors then aggregate to form a macro-level phenomenon. In this way, the macro-level situation is connected to the macro-level outcome.[143] Figure 5 shows how the elements of Coleman's boat apply to the research at hand.

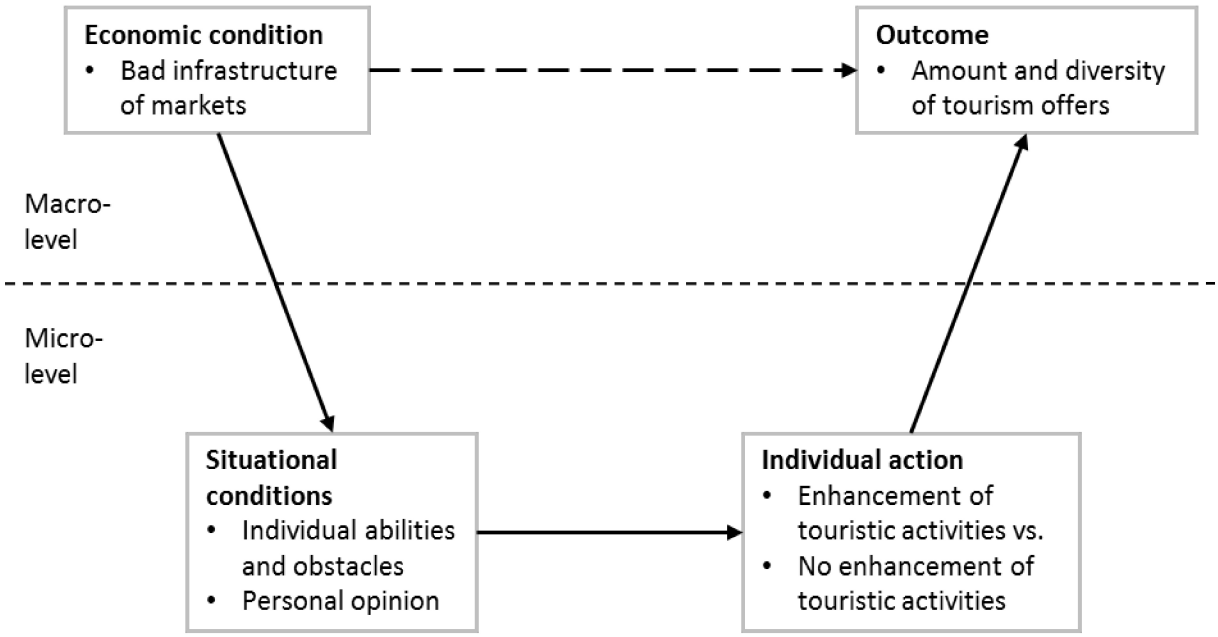


Figure 5: Coleman's boat in application to the research
Source: Modified from Coleman (1990, p. 401).

2.4.1 Economic Condition & Situational Conditions

The economic condition of overall Georgia in general and the rural research areas in particular define the initial macro-level situation. Agricultural activities have helped the Georgian population through the first years after the independence which was a result of the break-up of the Soviet Union and accompanied by a break-down of markets and consequently the Georgian economy. Studies and reports by international organizations confirm that by distributing formerly state-owned land to private households, the population was able to provide themselves with the most urgent food products.[144] However, production remains low and is focused on basic foods instead of cash crops.[145] Since the turn of the century there has also been a change in poverty dynamics. Whereas the strategy of fighting poverty through the distribution of land for means of subsistence farming was

[143] Cf.: Coleman 1990, pp. 400ff. and 772-777.
[144] Cf.: Kegel 2003, p. 159.
[145] Cf.: Kötschau 2012, p. 13.

able to keep poverty lower in rural areas than in urban areas until the middle of the 1990s, poverty is now prevalent in rural areas.[146] Today poverty incidence is significantly higher in rural regions than in urban areas. Since the Rose Revolution, the poverty gap between urban and rural areas has been widening and although more than half of the Georgian population lives in cities, 64 % of the poor population lives in rural areas. Generally, the living standards in Georgia have slightly risen during the 2000s and reforms between 2003 and 2007 were followed by economic growth. The improvement of the living standards had a stronger effect on the urban areas and the more wealthy population to begin with. From 2008 on, global recession and the ongoing conflict with Russia led to a decline of economic activities and an increase of overall poverty from 2008 to 2009 of 2 %. Rural areas were much more affected by the poverty increase, facing 3 % of poverty increase as opposed to 1 % in urban areas.[147]

2.4.2 Individual Action & Outcome

These conditions shape the scope of action of the individual households of the target population in the two research areas. Their options with regard to actions for a change in their living situation are defined by their assets and other ameliorative factors but also by obstacles and negative factors. Non-material conditions can furthermore exert an influence on behavior. In order to understand how the households at the micro-level arrive at individual actions, a theoretical approach from social psychology is used to analyze psychological constructs that influence the formation of behavioral intentions. Using the Theory of Planned Behavior (TPB) by Ajzen and Fishbein[148], the question of which aspects influence households the most when deciding to venture into the tourism sector by making their own offers (or enhancing existing offers) to tourists will be addressed. The TPB has been applied many times over since it was first stated in 1985[149]. Examples of applications can often be found for health related issues[150], but also economic questions[151] or other topics[152] altogether. Hansson, Ferguson & Olofsson (2012) used the TPB to analyze Swedish farmers with regard to their intentions to diversify or specialize their business.[153] In their analysis of 679 farmers, attitude and subjective norm have a significant influence on the decision of which strategy to adopt. This application of Hansson, Ferguson & Olofsson is an example of a TPB application in the field of agriculture. However, it differs from the study at hand in several aspects. The target population were commercial farmers in Sweden, whereas the target population in this study consists of households that are involved in agricultural activities, but only a small amount of them does this on a commercial basis. There is no agricultural enterprise in the sample. The second major difference is the target behavior. Hansson, Ferguson & Olofsson included farm diversification outside conventional agricultural production, but the activities were still related to agriculture as such. The study that was conducted here, on the other hand, surveyed households that are typically involved in agricultural

[146] Cf.: Kötschau, Sepashvili & Narimanidze 2009, p. 237.
[147] Cf.: World Bank 2011, pp. 7–11.
[148] Cf.: Fishbein & Ajzen 2010.
[149] Cf.: Ajzen 1985.
[150] Cf.: Norman & Smith 1995; Bassett-Gunter, Levy-Milne, Naylor et al. 2015.
[151] Cf.: Liñán & Chen 2009; Krueger, Reilly & Carsrud 2000; Kristiansen & Indarti 2004; East 1993.
[152] Cf.: Hrubes, Ajzen & Daigle 2001 used the TPB to predict hunting intentions and Bamberg, Ajzen & Schmidt 2003 investigated travel mode choice.
[153] Cf.: Hansson, Ferguson & Olofsson 2012.

activities for subsistence use and analyzed these households regarding their intentions to enhance (or start) activities in another sector, namely tourism. The study by Hansson, Ferguson & Olofsson shows that the TPB is also suitable to work in the framework of agriculture. This was altered in the present study to a non-agricultural activity. In this way, the TPB is used to analyze behavioral intentions at the micro-level, but Fishbein & Ajzen (2010) indicate that their theory is also embedded in phenomena at the societal level and "can provide a useful bridge between the aggregate and individual levels of analysis."[154] Contemplating Coleman's boat (see Figure 5), one can see how the economic living conditions shape the individual circumstances of the households which lead to their (re)actions. These in turn can also be considered on the macro-level in the form of – in this case – overall amounts of households active in tourism.

2.4.3 Research Objectives

The objective of this research is twofold. Firstly, since available secondary data on the research areas is not available for the single villages of interest, an analysis of the status quo of socio-economic living conditions is to be made in order to position the households with regard to income, agricultural activities and activities in the tourism sector. Secondly, because secondary data would not allow the inferences to analyze household behavior, the household survey conducted for this research included items to assess the constructs formulated in the Theory of Planned Behavior (TPB). Building on this basic model, underlying beliefs are assessed to gain information on points that can be addressed in possible interventions. These research gaps and the necessity of research regarding income sources that was explained in the above sections lead to three main research questions which guide this study:

1. How do private households carry out agricultural activities and how are they involved in the tourism sector? Are there differences between the research villages?
2. Which psychological determinant influences the behavioral intentions of the households in the research areas regarding an enhancement of their activities in the tourism sector the most?
3. Which fundamental aspects can be addressed to foster the intention to enhance tourism supply?

In order to answer the first question, differences between the regions and between villages will be analyzed. The focus will be on monetary income on the one hand and agricultural activities and products on the other hand. Also included in this analysis is descriptive data on the involvement of private households in the tourism sector. This data gives important information that will also be used in the following step when the behavioral intentions regarding an enhancement of the tourism supply will be studied. Turning to the second research question, the TPB will serve as the methodological framework to determine the importance of three psychological constructs regarding the intention to become (more) active in the field of tourism. Incorporating behavioral, normative and control beliefs into the study, provides insight into the informational foundation of the constructs and can be used to derive interventions for a change in intention, thereby answering the

[154] Fishbein & Ajzen 2010, p. 250.

third question.[155] Although the advantages of the incorporation of beliefs is highlighted by Fishbein & Ajzen (2010), this combination of belief-based measures with global measurements is not frequently done in practice. Further aspects that provide information for possible interventions are derived from subsequent analyses.

A meta-study on hospitality marketing and management showed that research areas can be grouped into consumer and tourist behavior, social media and website use, special events, destinations, finances and human resources. It is furthermore remarkable that research is focused on developed countries whereas research output on developing countries is marginal.[156] Another meta-study on attitudes of residents towards tourism found that it has become more common to apply theories from scientific disciplines such as sociology and psychology in order to examine tourism related research questions and both methodological and theoretical aspects have risen in quality. At the same time the authors stress that more innovative studies which examine the attitudes of residents towards tourism are needed.[157] The TPB incorporates a latent construct that measures attitude and has been applied to research questions related to tourism in several cases, but no analysis of behavioral intentions regarding an enhancement of touristic activities of private households has been conducted for the research areas as far as the author knows. Most often articles on tourism related research questions with an application of the TPB focus on tourists and their choices or intentions. Sparks & Pan (2009) analyzed Chinese tourists regarding their intentions to travel abroad using the TPB.[158] In an analysis of travel behavior formation, Hsu & Huang (2012) developed an extended TPB model and Al Ziadat (2015) applied the TPB to study the revisit intentions of international tourists in Jordan.[159] Nunkoo & Ramkissoon (2010), on the other hand, consider the TPB a valuable approach to study community support for tourism. They advocate enhancing the model by a gender component that is hypothesized to moderate the influence of perceived control on the behavior.[160] Whereas the previously mentioned applications of the TPB with a reference to tourism focused on the tourists, the latter approach focuses on the people effected by tourism in the region. This approach is closer to the research conducted here, however, it still has a slightly different target population since the research at hand will focus on all private households in the research regions that could potentially enhance or start activities in the tourism branch. The analysis gives insights into psychological antecedents to behavior that can be used as a starting point for interventions to encourage further activities. These can have a valuable contribution for the rural development in mountainous regions of Georgia to prevent ongoing depopulation of the areas due to a lack of job opportunities.

[155] Cf.: Fishbein & Ajzen 2010, pp. 331f.
[156] Cf.: Nunkoo, Gursoy & Ramkissoon 2013, pp. 280f.
[157] Cf.: Nunkoo, Smith & Ramkissoon 2013, pp. 20f.
[158] Cf.: Sparks & Pan 2009.
[159] Cf.: Hsu & Huang 2012; Al Ziadat 2015.
[160] Cf.: Nunkoo & Ramkissoon 2010.

3 Theoretical Framework

3.1 Theory of Reasoned Action

Whether or not there is a connection between attitudes and behavior has been subject to criticism for a long time. LaPiere doubted the attitude-behavior relationship in 1934 after perceiving that people act contrary to their attitudes,[161] but research trying to find a way to link attitudes to actual behavior continued. In 1977, Ajzen & Fishbein argued that there could only be a strong relationship between attitudes and behavior if there was a high degree of correspondence between the two.[162] They analyzed 142 attitude-behavior relations and found significant relationships of $r \geq .40$ when correspondence of attitude and behavior was high and appropriate measures were used.[163] In order to establish correspondence, the authors recommend to define the object of investigation (and hence both attitude and behavior) according to target, action, context and time (the "TACT" elements): the action should be described clearly, it should be directed at a certain target, be embedded within an explicit context and refer to a specific time frame or point in time.[164] Sometimes these elements are not that easy to differentiate and especially target and context tend to blur. The definition of the elements will finally depend upon the research objective.[165]

The Theory of Reasoned Action aims at explaining human behavior and was developed by Fishbein and Ajzen. The underlying assumption of the theory is that the intention to carry out a certain behavior (I) has a strong causal influence on the behavior (B) itself.[166] Since the research objectives of this study focus on the explication of the psychological constructs that influence intention and their underlying aspects, the intention component of the theory is the focus of this work. Therefore, the following explications will concentrate on the intention component. Two latent constructs are presumed to influence intention, namely attitude (A) and subjective norm (SN). These constructs receive empirical weights (w_1 and w_2) depending on their respective importance in explaining intention.[167] The basic theory can be expressed as in the following equation:

Equation 1: Theory of Reasoned Action

$$B \sim I = (A)w_1 + (SN)w_2$$

Note: B = behavior, I = intention, A = attitude, SN = subjective norm, w_1 = weight for attitude, w_2 = weight for subjective norm. Source: Modified from Fishbein & Ajzen (1975, p. 301).

Both explanatory constructs focus on subjective perspectives of the respondents. They are considered to be latent factors because they are not directly tangible but rather have to be inferred from manifest items. Attitude reflects certain evaluations of an individual towards, e.g. an object, a

[161] Cf.: LaPiere 1934, pp. 232–235.
[162] Cf.: Ajzen & Fishbein 1977, p. 891.
[163] Cf.: Ajzen & Fishbein 1977, p. 913.
[164] Cf.: Ajzen & Fishbein 1977, pp. 888–890.
[165] Cf.: Fishbein & Ajzen 2010, pp. 29f.
[166] Cf.: Frey, Stahlberg & Gollwitzer 1993, p. 367.
[167] Cf.: Fishbein & Ajzen 1975, pp. 301–303.

situation or an action. They can be divided into cognitive, affective and conative responses[168] which are regarded as alternative ways to measure an individual's attitude by Fishbein & Ajzen (1975).[169] The theory emphasizes that the "decisive" attitude is the one on the behavior itself as opposed to an object or a target of that behavior.[170] Attitudinal evaluations can be either positive or negative and they are not limited to a certain amount. However, it seems that a person can only hold a small number (five to nine) of such beliefs as readily accessible. Fishbein and Ajzen call these *salient* beliefs and argue that these are the immediate determinants of attitudes at a given moment. Different beliefs can be salient for individual persons and these can also change over time. In order to assess the prevalent attitude in a population, the salient beliefs held most often serve as a good approximation of attitude.[171] The evaluation of an outcome as positive or negative can differ from respondent to respondent and is taken into account by using an expectancy-value model which relates the strength of a belief (b_i) with a subjective evaluation (e_i). There can be several beliefs regarding a research object. Each belief is multiplied by its corresponding evaluation and then all of the products are summed. The theory states that this summative belief index is directly proportional to attitude (A), as is shown in Equation 2.[172]

Equation 2: Attitude

$$A \propto \sum b_i \, e_i$$

Note: A = attitude, b_i = behavioral belief, e_i = subjective evaluation of outcome. Source: Ajzen (2005, p. 30).

Subjective norm concentrates on an individual's perception of social pressure. Whether or not important others approve of a behavior or would even carry it out themselves gives an indication of how much social pressure a respondent feels. Therefore, normative beliefs about referents or referent groups can be seen as underlying subjective norm. Significant referents can, e.g. be a person's partner, parents, friends, colleagues. Which groups of referents are important depends on the behavior to be studied.[173] Apart from the referent groups, it is also deemed important to know how important each single one of these groups is to the respondent. Therefore, the respondent's general tendency to act according to the wishes of referent groups is assessed as his or her motivation to comply with this specific group or individual. The more power a person or referent group has over the respondent, the higher the motivation to comply.[174] Each normative belief (n_i) regarding a certain referent group is multiplied by the respondent's motivation to comply (m_i) with this group.[175] As in the case of attitude, the summation of all products after multiplying normative beliefs by motivations to comply is directly proportional to subjective norm (SN). This can be expressed as follows:

[168] Cf.: Ajzen 2005, pp. 3–5.
[169] Cf.: Fishbein & Ajzen 1975, p. 341.
[170] Cf.: Fishbein & Ajzen 1975, p. 302.
[171] Cf.: Fishbein & Ajzen 1975, pp. 218f.
[172] Cf.: Ajzen 2005, p. 30.
[173] Cf.: Ajzen 2005, p. 124.
[174] Cf.: Fishbein & Ajzen 1975, p. 306.
[175] Cf.: Fishbein & Ajzen 1975, p. 302.

Equation 3: Subjective norm

$$SN \propto \sum n_i \, m_i$$

Note: SN = subjective norm, n_i = normative belief, m_i = motivation to comply. Source: Ajzen (2005, p. 125).

The Theory of Reasoned Action does not claim that there are no other factors which influence intentions aside from those mentioned. The inclusion of external factors such as e.g. demographic variables, personality characteristics or situational factors can lead to a better understanding of intention. However, the authors state that whatever influence is exerted on intentions will always be mediated via either the attitudinal component, the normative component or the relative weights of these. Studies involving external factors show that additional variables do not only correlate with intention but are always also connected to an explanatory factor of the theory, thus corroborating the mediation. An external factor or variable will only influence intention significantly if the component or weight that mediates its influence itself has a significant effect on intention.[176]

Fishbein & Ajzen (1975) report that the two determinants, namely attitude and subjective norm, are not necessarily unrelated. They state that there can be correlations of differing magnitude between both components, depending on the research situation.[177]

The previous explications lead to the Theory of Reasoned Action as it is shown in Figure 6.

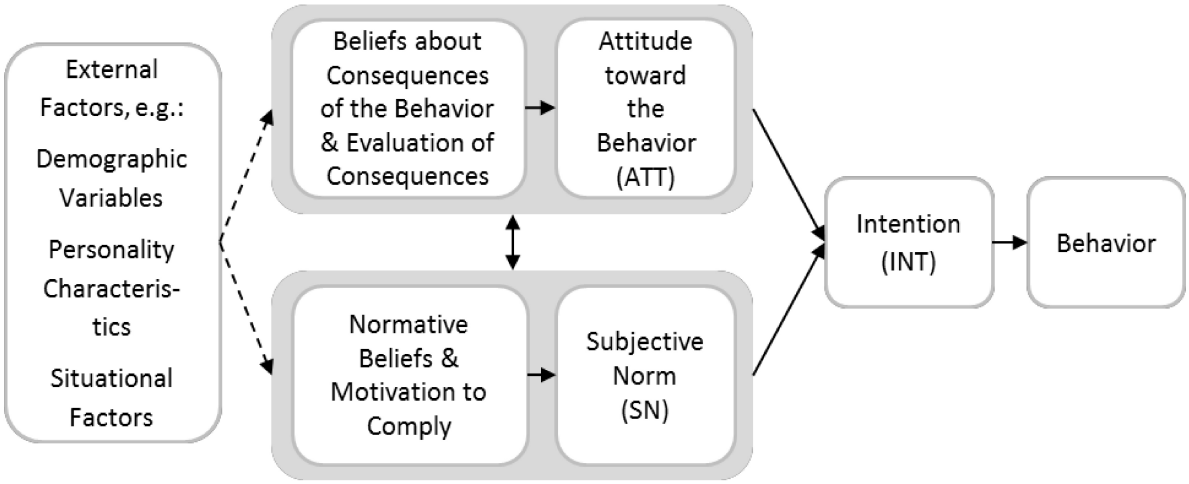


Figure 6: Theory of Reasoned Action and examples of possible external factors
Source: Modified from Fishbein & Ajzen (1975, p. 334).

Depending on the research objective, it is not always required to assess all of the components of the theory in the way they are shown in Figure 6. If, e.g., the focus of a study is to find out which factor influences intention the most, it is not necessary to obtain a behavior measure. Furthermore it is possible to model the theory by simply using the direct measures of the explanatory constructs without including their respective indirect measures which are composed of beliefs multiplied by

[176] Cf.: Fishbein & Ajzen 1975, pp. 307 and 315f.
[177] Cf.: Fishbein & Ajzen 1975, p. 315.

either the evaluations of the consequences or the motivations to comply.[178] External factors are optional.

3.2 Theory of Planned Behavior

The Theory of Reasoned Action (TRA) was successfully applied in studies which were carried out in very different research areas, predicting different kinds of behaviors and intentions. The examined behaviors range from voting choice (Fishbein, Ajzen & Hinkle 1980) to smoking marijuana (Ajzen, Timko & White 1982), from use of birth control pills (Fishbein, Jaccard, Davidson et al. 1980) to having an abortion (Smetana & Adler 1980), from cooperation in the prisoner's dilemma game (Ajzen 1971) to women's choice of career orientation (Sperber, Fishbein & Ajzen 1980), to name a few examples.[179] Aside from the mere prediction of intention, it is also possible to gain insight into the explanation of intention by analyzing the behavioral and normative beliefs that lead to the formation of intention. Despite these achievements of the TRA, a limitation of the theory becomes evident: it can only predict behavior and intention as long as they are under volitional control.[180] Say, for instance, a behavior required a large amount of money in order to perform it, a person would still not e.g. buy a car as long as he or she did not have the money to do so, even if he or she held positive attitudes towards buying a car and social referents supported him or her buying a car. Ajzen and Madden argue that there are several potentially hindering factors that prevent people from performing a behavior which can be divided into internal and external factors. Such factors can arise from time restraints (external), limited skills (internal), missing cooperation from other people (external) or the already mentioned lack of money or other resources (external) but they are not limited to these. The authors reason that even activities that may seem rather trivial at first glance – such as going to the supermarket – can be circumvented by e.g. problems with the car. Thus, volitional control over a behavior can range from low to high and should be seen as a continuum.[181] In order to explain behaviors that are not (completely) under volitional control, a measure of a person's control over the behavior should be taken into account.

Assessing a global measure of behavioral control would require to incorporate other sources of information aside from the respondent him- or herself in order to cover every possible impediment. On the one hand this would require additional resources regarding both time and financial budget. On the other hand one could wonder how useful a global measure of control would be for the prediction of an individual's intention to perform a behavior. Isn't it more important to know how restricted a respondent *personally* feels? A respondent's subjective assessment of his or her own abilities and resources will have an effect on that person's intention towards performing a behavior, leading to a better prediction of intention. Ajzen (1985) therefore promoted an addition to the TRA that would incorporate a perceived volitional control over the behavior.[182] Similar to the constructs attitude and subjective norm of the TRA, it is assumed that people hold beliefs about the control

[178] Cf.: Ajzen 1985, 15ff.; Ajzen & Fishbein 1980, p. 98.
[179] For an overview of these and other (meta-)studies see Ajzen 1985, pp. 16–18; Fishbein & Ajzen 2010, p. 181.
[180] Cf.: Ajzen 1985, p. 18.
[181] Cf.: Ajzen & Madden 1986, pp. 455f.
[182] Cf.: Ajzen 1985, p. 30.

over a behavior. These are termed control beliefs.[183] Control beliefs can be seen as underlying perceived behavioral control. Their formation is influenced by the respondent's own experiences but also by information that he or she gained from watching others and by further factors that affect the perceived control. The control beliefs (c_i) indicate the presence or absence of hindering or also fostering factors and they are multiplied by their power (p_i) to prevent the behavior. As can be seen in Equation 4, the sum of all control beliefs multiplied by their power is directly proportional to perceived behavioral control (PBC). The amount of perceived behavioral control is higher if a person feels that he or she has the necessary abilities (e.g. knowledge) and there are little to no obstacles (e.g. legal boundaries).[184]

Equation 4: Perceived behavioral control

$$PBC \propto \sum c_i p_i$$

Note: PBC = perceived behavioral control, c_i = control belief, p_i = subjective power. Source: Ajzen (2005, p. 125)

Perceived behavioral control can furthermore be seen as a proxy for actual behavioral control. The subjective evaluation of an individual is assumed to approximate actual control and can consequently have a direct influence on behavior aside from the mediated effect through intention. This direct effect of perceived behavioral control on behavior is higher if the evaluation of the respondent is objectively correct and it will be 0, i.e. non-existent, if the evaluation of the respondent is incorrect (because of this possibility, the effect of perceived behavioral control on behavior in Figure 7 is represented by a broken arrow).[185]

For the relationships among the three explanatory constructs of intention it remains to say that they are not necessarily independent. They are correlated due to external common causes and interactions between attitude, subjective norm and perceived behavioral control are possible as well.[186] The Theory of Planned Behavior (TPB) makes no prediction regarding the relative strength of the influence of either explanatory component; furthermore the relative contribution to the explanation of intention is expected to vary depending on the behavior and the population of interest.[187]

All the beliefs that are underlying attitude, subjective norm and perceived behavioral control are subjective assessments by the respondent. These assessments can be flawed due to e.g. wrong information or incorrect inferences drawn from this (sometimes wrong) information. The reasoning of a respondent may be irrational or biased by wishful thinking, yet this is exactly what drives his or her beliefs. The theory emphasizes that people act upon the information they have – be it wrong or right, biased or not – and beliefs are the manifestations of such information and the interpretation of information.[188] The reactions that follow intentions and the formation of attitude, subjective norm

[183] Cf.: Ajzen & Madden 1986, p. 457.
[184] Cf.: Ajzen 2005, p. 125.
[185] Cf.: Ajzen 2005, p. 119.
[186] Cf.: Ajzen & Madden 1986, p. 459; Yzer 2007, pp. 111–115; Fishbein & Ajzen 2010, pp. 21–23.
[187] Cf.: Fishbein & Ajzen 2010, pp. 21f.
[188] Cf.: Fishbein & Ajzen 2010, pp. 223f.

and perceived behavioral control take place in a rational way, even if the reaction itself might not be considered rational from a different perspective.[189]

The whole model, following the explications from above, can be depicted as follows:

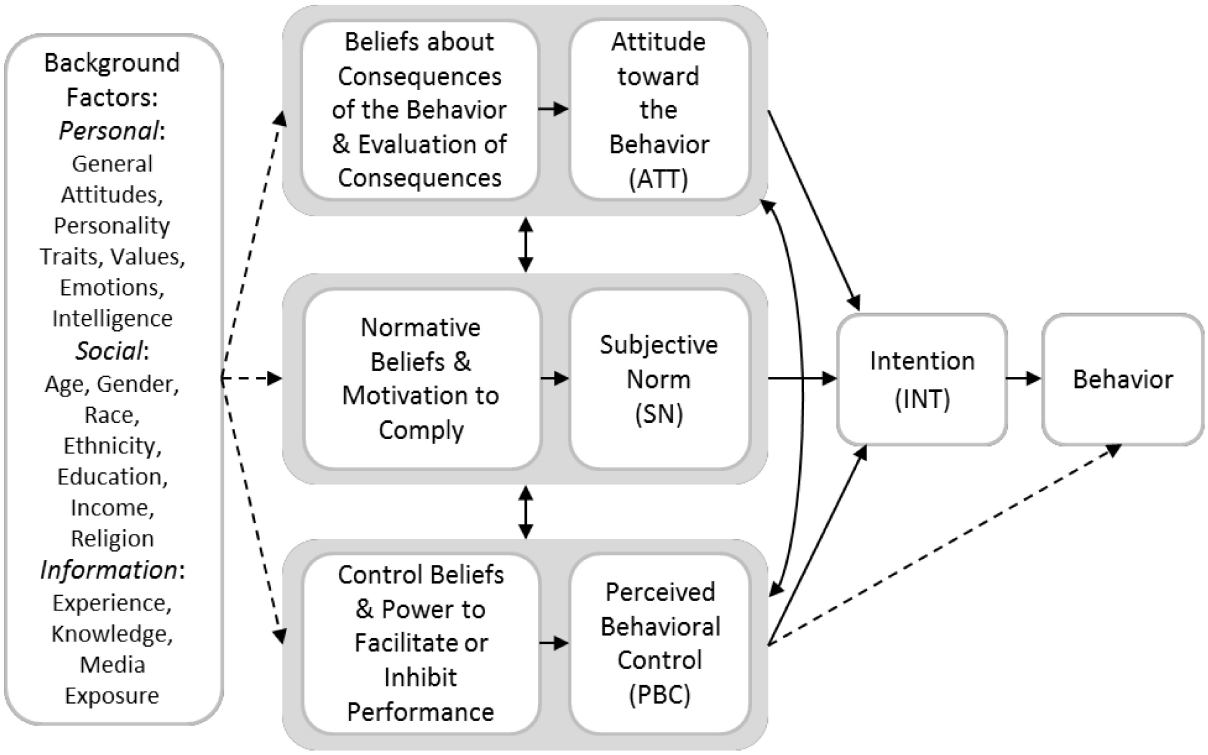


Figure 7: Theory of Planned Behavior
Source: Modified from Ajzen (2005, p. 135).

Ajzen (2005) mentions that there can be further influential factors that affect behaviors. He considers these to exert an effect via beliefs, as it was stated for behavioral and normative beliefs in the TRA, and calls them background factors. They can be divided into personal, social and informational factors (see Figure 7).[190] Since such external factors (say, e.g. religion or social class) influence the environment in which beliefs are formed they are considered to be related to beliefs (depicted by broken arrows).[191]

In 2010, Fishbein & Ajzen published a new book on their work, reconciling the divergent paths that their research had taken during the 1990s. They merged their experiences from their separate research activities and refined the theory, titling it the Reasoned Action Approach (RAA).[192] The core constructs of the Theory of Planned Behavior remain unchanged. The following equation shows the relationship of the central constructs.

[189] Cf.: Fishbein & Ajzen 2010, p. 24.
[190] Cf.: Ajzen 2005, p. 135.
[191] Cf.: Ajzen & Fishbein 1980, pp. 90f.
[192] Cf.: Fishbein & Ajzen 2010, pp. 19f. and 20-23.

Equation 5: Theory of Planned Behavior

$$B{\sim}I = (A_B)w_1 + (SN)w_2 + (PBC)w_3$$

Note: B = behavior, I = intention, A = attitude, SN = subjective norm, PBC = perceived behavioral control, w_1 = weight for attitude, w_2 = weight for subjective norm, w_3 = weight for perceived behavioral control. Source: Modified from Fishbein & Ajzen (1975, p. 301).

3.2.1 Application to the Research Question

As it was shown in Chapter 2.2, the tourism sector is of considerable importance in both research regions. While Bakuriani has a longstanding tradition as a winter sports resort, Kazbegi has become rather popular as a summer destination. Some private households have "jumped on the bandwagon" (see Leibenstein 1950 for the bandwagon effect) and are offering rooms for rent, starting up small cafés or providing service and materials for mountain and hiking tours. In addition to the financial gains of the two regions, tourism also offers private citizens the opportunity to increase their prosperity at the household level. Therefore, our central research question is now how important are attitudes (ATT), subjective norms (SN) and perceived behavioral control (PBC) for the private households' intentions to start tourism activities? Which of these constructs influences their intentions the most? The Theory of Planned Behavior helps examining the factors that relate to behavioral intentions and will be used to gain information about the underlying belief structure that drives the local households towards this entrepreneurial endeavor that can foster the generation of monetary income.

Kristiansen & Indarti (2004) analyzed entrepreneurial intentions of Indonesian and Norwegian students. They found that the intentions of the Indonesian students – coming from a more collectivist culture – were significantly higher than the intentions of the Norwegian students from a more individualist culture. The entrepreneurial intentions were significantly influenced by perceived self-efficacy and instrumental readiness such as e.g. having the capital to start a business. The authors themselves observe that an inclusion of other factors like e.g. family background might increase the explained variance of 23 and 26 % for Norway and Indonesia respectively.[193] In a study examining investment decisions, East (1993) used the TPB to predict the application for shares. The explained variance of the behavior of applying for shares was between .54 and .67 for three different kinds of shares. Of the salient beliefs that were used to understand the formation of the latent constructs ATT, SN and PBC, friends and relatives (SN), easy access to funds (PBC), amount of energy needed to apply (PBC) and profit and outcome security (ATT) were the most important aspects.[194] Using a modified version of the TPB, Liñán & Chen (2009) compared respondents from Spain and Taiwan regarding their entrepreneurial intentions. They found the model to hold for both countries, giving an example of the TPB successfully explaining entrepreneurial intentions in different cultural settings.[195]

[193] Cf.: Kristiansen & Indarti 2004, pp. 55, 66 and 71.
[194] Cf.: East 1993, pp. 349f., 357 and 367.
[195] Cf.: Liñán & Chen 2009, pp. 611f.

Fishbein & Ajzen (1975) emphasize the importance of a careful consideration of four constituting elements of intentions.[196] Behavioral intentions can be formulated in varying specificity. Depending on how precise or general the description is, the intention is more specific or general respectively. The elements target, action, context and time (in short "TACT") serve to define the behavior or intention under study: target meaning the object or aim at which the action is directed, action indicating the deed to be carried out, context relating to the environmental components and time specifying when this is to take place.[197] Following the recommendations of Fishbein & Ajzen (1975) and Ajzen & Fishbein (1977), the formulation of the behavior was conducted according to the TACT elements.

Since there are households that are already involved in tourism in one way or another and households that are not yet involved but may be intent on doing so, the examined behavior shall be formulated in a way that will include both tourism suppliers and households not (yet) involved in tourism. Therefore, it was decided to use the term "**enhance**" (action) because it also includes increasing something that has already been started instead of only beginning something new and someone who is not already active in that field can also advance his non-activity into action. The first field trip to Kazbegi and Bakuriani which took place during the kick-off meeting of the AMIES project in May 2010 showed that the private households do not all make the same offers in the tourism sector, so it seemed wise to ask about **tourism supply** (target and context of the action) in general. Entrepreneurial intentions are characterized by rationality rather than intuition.[198] Since an intention regarding a new branch of business is not a spontaneous reaction but a decision that is most of the times well thought out, the time frame for such an action should not be very short. Seasonal tourism flows may lead a household to the consideration that starting a new business should be done until e.g. the coming summer season. As the household survey took place in June and July, a half year time frame would not have included such intentions, so it was decided to set the time frame at "**in the next year**" (time). Hence, the objective of the present investigation was to determine the intentions of households to "enhance tourism supply in the next year". Figure 8 displays how the TACT elements relate to the components of the behavior.

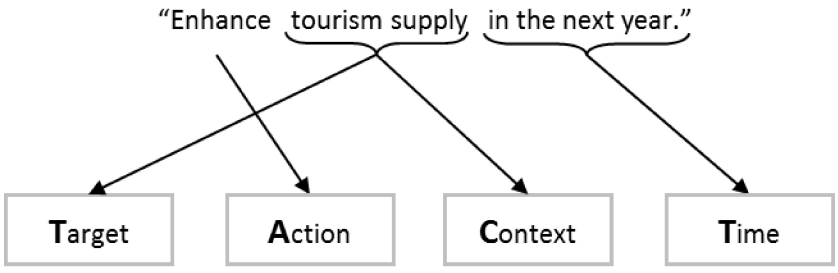


Figure 8: TACT elements in the application of the Theory of Planned Behavior
Source: Own illustration.

[196] Cf.: Fishbein & Ajzen 1975, p. 318.
[197] Cf.: Ajzen 2005, p. 85; Ajzen & Fishbein 1977, p. 889.
[198] Cf.: Bird 1988, p. 443.

When analyzing an intention it is crucial that the predictors used are formulated regarding the same elements as the intention itself. Following the principle of compatibility, predictors must be equal in their level of generality or specificity.[199] There is no problem if both criterion and predictors are equally unspecific, but they must needs correspond to one another.[200]

3.2.2 Measurement of Latent Constructs

The Theory of Planned Behavior distinguishes direct and indirect measures for attitude, subjective norm and perceived behavioral control. These measures differ in their degree of explicitness. Direct measures are more general or global in their formulation whereas indirect measures target more specific aspects of a behavior and related issues. These aspects can be designed so as to cover both positive and negative aspects and thereby deliberately make the respondent consider two sides of the same coin.[201] The indirect measures are typically composed of behavioral, normative and control beliefs as the underlying factors of attitude, subjective norm and perceived behavioral control respectively. These beliefs are considered to be the informational foundation of behavior[202] and therefore help to understand the cognitive foundation of their corresponding independent constructs attitude, subjective norm and perceived behavioral control.[203]

Methodologically, the indirect belief measures are modeled as formative indicators (sometimes called causal indicators). As opposed to reflective indicators, the direction of causality for formative items is from the item(s) to the construct. While reflective items are manifestations of the latent construct, formative items are the defining characteristics of the construct. Dropping a formative indicator may therefore alter the meaning of the construct, whereas reflective items should be interchangeable.[204]

For practical applications, it is not generally necessary to assess beliefs if the prediction of intention is of primary interest. The direct measures give all the information required for the prediction. The influence of beliefs is anyhow not direct, but mediated through attitude, subjective norm and perceived behavioral control (cf. Figure 7). Still, the analysis of beliefs will give a deeper understanding of the formation of the more general, direct measures.[205] The beliefs reveal the anticipated outcomes (positive or negative) of a behavior, the perception of other people's opinions toward it and whether or not the respondent thinks he or she is in possession of the necessary resources to carry out the behavior.[206] It is these underlying beliefs that should be the target of interventions with the aim of changing behavior. Changing the beliefs will lead to a change in

[199] Cf.: Ajzen 2005, p. 88.
[200] Cf.: Ajzen & Fishbein 1977, p. 913.
[201] Cf.: Ajzen 2005, p. 10.
[202] Cf.: Ajzen 2005, p. 123.
[203] Cf.: Ajzen n.d.a, p. 2.
[204] Cf.: Jarvis, MacKenzie & Podsakoff 2003, p. 203. On the differences of formative and reflective indicators see also Diamantopoulos & Winklhofer 2001; Bollen & Davis 2009.
[205] Cf.: Ajzen & Fishbein 1980, p. 90.
[206] Cf.: Fishbein & Ajzen 2010, p. 23.

intention, but it should be marked that it can be necessary to change several beliefs in order to achieve an overall adjustment of e.g. attitude.[207]

When both direct and indirect measures are assessed in a study, it is possible to correlate both measures for the same construct with one another. This gives an indication of the validity of the measures[208] and proof for the informational foundation of attitudes, subjective norm and perceived behavioral control. Hrubes, Ajzen & Daigle (2001) do so in their application of the Theory of Planned Behavior to hunting behavior. The authors successfully explain hunting intention with the direct measures (the multiple correlation with intention is in fact very high with a value of .93 and significant at the .01 level) and also find significant correlations between the direct measures of attitude, subjective norm and perceived behavioral control and their respective indirect measures. With values of .76, .74 and .72 respectively they can also be considered rather high. The authors conclude that this corroborates the informational foundation of the explanatory constructs in the TPB.[209] In a meta-analysis of the TPB Armitage & Conner (2001) found a correlation of .50 for attitude and subjective norm measures and of .52 for perceived control measures.[210] It is also possible to combine direct and indirect measures within an application of the theory. Fishbein (1966) did so in an analysis of intentions regarding premarital sexual intercourse where he used a direct measure for the attitude component and a belief-based measure for subjective norm.[211]

The salient beliefs (i.e. the indirect measures) are generally used to predict attitude, subjective norm and perceived control. For the prediction of intention on the other hand, Fishbein & Ajzen (2010) recommend direct measures of the explanatory constructs. They also state that it is better not to split these constructs into different sub-dimensions when the prediction of intention is the objective of the analysis. Instead, unitary constructs should be used which can very well be composed of multiple indicators.[212] Single-item measures have the disadvantage of low reliability. In case of subjective norm, Armitage and Conner showed that applications using single-items often show a lower explanatory power than multiple-item measures.[213] Therefore it has become more common to use multiple-item measures to minimize the effect that e.g. a misread item could have. If there is only one item and this one is misread, the whole meaning is reversed. If, on the other hand, one of multiple items is misread, the overall value will be changed a little, but not completely. There may also be a problem with the formulation of an item. This problem will not be as grievous if there are other items that will be used to calculate a final score for the factor.[214] The total score will then give the degree of someone's overall attitude, perceived social pressure and subjective control over a behavior.[215]

[207] Cf.: Ajzen n.d.a, pp. 4f.
[208] Cf.: Francis, Eccles, Johnston et al. 2004, p. 30.
[209] Cf.: Hrubes, Ajzen & Daigle 2001, pp. 173–175.
[210] Cf.: Armitage & Conner 2001, p. 481.
[211] Cf.: Fishbein 1966, cited by Fishbein & Ajzen 1975, p. 311.
[212] Cf.: Fishbein & Ajzen 2010, pp. 184f.
[213] Cf.: Armitage & Conner 2001, pp. 484f.
[214] Cf.: Ajzen 2005, pp. 8f.
[215] Cf.: Ajzen 2005, p. 13.

For the attitude construct it is common to use semantic differentials as direct measure. Semantic differentials were originally developed to measure meaning by linking associational and scaling procedures.[216] When used for the measure of attitude, "a set of bipolar evaluative adjective pairs"[217] is used. The endpoints of a scale are labeled with the opposing adjective pairs and the scale points represent the continuum that spans from one adjective to the other. Respondents are instructed to mark the part of the scale that reflects the direction and intensity of their evaluation. Typically, such scales feature seven scale points, but the number of scale points can differ. It is assumed that a concept has a limited number of dimensions.[218] In order to represent these dimensions semantically, sets of adjective pairs are used. Every pair that is used has to reflect a dimension of the object or attitude.[219]

3.2.3 Moderation Effect of Perceived Behavioral Control

The proposed structures between the latent constructs leading to the explanation of INT have been questioned by several researchers. Many of them consider interactions between the constructs that lead to a conditional influence of one construct on INT that is dependent on the level of agreement that another construct receives. Analyzing service-provider switching, Bansal & Taylor (2002) found significant interaction effects between PBC and INT on behavior, between PBC and ATT and between ATT and SN.[220] Kothe & Mullan (2015) assumed that there would be interaction effects between ATT and PBC, SN and PBC, SN and ATT on INT and of PBC and INT on behavior. However, they were only able to find significant moderating effects for ATT and PBC and for PBC and INT, but only after a one week follow-up, not after one month.[221] In a study on drug use, McMillan & Conner (2003) confirmed the mediation of PBC on the relationship between INT and behavior and of ATT on the relationship between PBC and INT. In the case of one drug (of four) they furthermore detected that attitude variability had a moderating effect on the influence of ATT on INT.[222] In another study the same authors also found that the influence of ATT on INT was moderated by moral norms and for the additional construct impact of self-identity and its influence on INT there was a moderating influence from habit strength.[223] Povey, Conner, Sparks et al. (2000) took a closer look at social influence variables by measuring two additional components. Although the component perceived social support had no effect on INT over and above the other TPB-constructs, it mediated the influence of PBC on INT and of ATT on INT.[224] The last three studies show that in addition to interaction effects between the three explanatory TPB-constructs, researchers have also started to incorporate other measures that are closely connected to their research questions when appropriate.

Especially regarding the role of perceived behavioral control within the TPB there has been an ongoing debate. The predecessor of the TPB, the TRA (see Chapter 3.1), did not feature a factor

[216] Cf.: Osgood 1952, p. 222.
[217] Ajzen 2005, p. 8.
[218] Cf.: Osgood 1952, pp. 226f.
[219] Cf.: Ajzen 2005, p. 10.
[220] Cf.: Bansal & Taylor 2002.
[221] Cf.: Kothe & Mullan 2015.
[222] Cf.: McMillan & Conner 2003.
[223] Cf.: Conner & McMillan 1999.
[224] Cf.: Povey, Conner, Sparks et al. 2000.

representing a measurement of subjective control, limiting the scope of application to behaviors that are completely under volitional control.[225] With the addition of the construct PBC it became possible to examine behaviors under limited behavioral control as well. The use of the construct PBC within the TPB is, however, still discussed. Yzer (2007) suggests that PBC moderates the effects from SN and ATT on INT rather than in itself exerting an influence on INT that is independent of the constructs SN and ATT. If a behavior is not completely under volitional control, the amount of PBC regulates the effects ATT and SN have on INT. These effects are said to differ between low and high perceived control.[226] The basic idea is that if PBC is low, ATT and SN should not be able to explain INT as well as if PBC is high.[227] Some applications of the TPB have started to test this proposition. For instance, Castanier, Deroche & Woodman (2013) expected that ATT and SN would have an influence on INT only if they occur alongside with high perceived capacity or perceived autonomy. In their analysis of road violation intentions they were able to partially confirm this expectation depending on the kind of road violation behavior.[228] Dillard (2011) tested for a moderation effect in his analysis of intentions to obtain a vaccination for HPV and found that SN only had a significant relationship with INT when PBC was moderate or high and the higher the PBC-level, the larger was the significant relationship of ATT on INT. It is interesting to note that an interaction between ATT and SN was tested for, but found to be insignificant, furthermore validating Yzer's suggestion.[229]

A difficulty in detecting a moderation effect of PBC derives from the fact that such interactions usually only explain a small amount of variance.[230] In 2002, Ajzen already acknowledged that it is reasonable to assume that PBC interacts with ATT and SN in their influences on INT, but he also noticed that unless the values of the predictor variables are spread out on the answering scale, covering both extreme points of the scale, an interaction would not empirically show.[231] If there is a moderation effect of PBC in the case at hand will be tested by comparing a model that includes ATT, SN and INT for two groups, one showing high values in PBC and one showing low values (see Chapter 5.4.4). If there is a significant difference of the path coefficients between the two models, PBC in fact moderates the influence of ATT and SN on INT.

3.2.4 Integration of Background Variable

The Theory of Planned Behavior postulates that attitude, subjective norm and perceived behavioral control predict intention. However, it does not presume exclusiveness and grants the possibility that there may be further variables or constructs that influence beliefs. Such background factors or variables do not necessarily have to affect intentions and behavior directly; generally their influence will be mediated by the belief components, although it is also possible to find a direct effect of a background variable on intention.[232] Fishbein & Ajzen (2010) argue that different characteristics will create different experiences which in turn lead to the formation of different beliefs. It is for this

[225] Cf.: Ajzen 1991, p. 181.
[226] Cf.: Yzer 2007, p. 111.
[227] Cf.: Yzer 2012, p. 113.
[228] Cf.: Castanier, Deroche & Woodman 2013, pp. 154f.
[229] Cf.: Dillard 2011, p. 484.
[230] Cf.: Yzer 2007, p. 113.
[231] Cf.: Ajzen 2002, p. 667.
[232] Cf.: Ajzen 2005, pp. 134–136; Fishbein & Ajzen 2010, pp. 234f.

reason that an effect of a background variable on intention or behavior will usually disappear when attitude, subjective norm and perceived control are held constant.[233] Nevertheless, it is of interest to find and understand influential background factors in order to gain information on the source of beliefs which "serve as the cognitive foundation for the behavior"[234]. Naturally, considering a background factor or variable only makes sense when there is reason to believe that respondents vary in their manifestations of that factor.[235]

Background factors can roughly be grouped into personal, social and informational (cf. Figure 7). The first group of factors encompasses personality dispositions such as e.g. traits and values. Social factors are by and large demographic variables. The last group refers to sources of information, such as e.g. knowledge, newspapers or talk with neighbors.[236] One such source can also be experience. People who have already carried out a certain activity and possibly encountered difficulties in doing so or were surprised to find it easier than they had anticipated have a different informational basis than people never having attempted to perform that behavior. In a study comparing three kinds of dishonest behavior, Beck & Ajzen (1991) found that cheating was predicted better than shoplifting or lying to get out of class assignments and that cheating was also the behavior that most respondents admitted to having done in the preceding six months (47 % versus 29 % and 21 % for shoplifting and lying). The authors conclude that a lack of experience can lead to belief statements that are not reflective enough to allow for a precise prediction of behavior.[237] Furthermore it has to be considered that – as was pointed out earlier – information on which respondents' beliefs are based upon do not necessarily have to be veridical (cf. Chapter 3.2), so the conclusions drawn from them and their implications for behavioral intentions do not always follow rational thought or can be biased due to incomplete knowledge.[238]

The current analysis of an enhancement of the tourism supply in the next year shall include a measure of experience. It is assumed that households already involved in offers for tourists have more – or at least different – information on what it means to be active in this sector and therefore their underlying belief structure will be influenced by their past experiences in tourism. The household survey included information on the current engagement of households in touristic activities. This information was used to construct a variable that measures the amount of involvement and serves as a proxy for experience in the touristic field (cf. Chapter 5.3.5). The model shall be complemented by this variable as a background factor. In the process of enhancing the model by this variable it will be tested if the variable exerts significant influence on the explanatory constructs and whether it has a direct effect on intention.

[233] Cf.: Fishbein & Ajzen 2010, pp. 226f.
[234] Fishbein & Ajzen 2010, p. 253.
[235] Cf.: Fishbein & Ajzen 2010, p. 224.
[236] Cf.: Ajzen 2005, pp. 134f.
[237] Cf.: Beck & Ajzen 1991, p. 299.
[238] Cf.: Fishbein & Ajzen 2010, pp. 223f.

3.2.5 Influence of Cultural Aspects

Ethnicity is mentioned as a possible background variable in the category of social factors.[239] The cultural heritage of a respondent may influence the formation of his or her beliefs. Traditions and customs that are prevalent in a society affect a person in many ways. They are passed on to children when they are growing up and guide the development of values and beliefs alike.[240] As such, they are part of the macro-level conditions that shape the societal environment of an individual as Coleman described.[241] Fishbein & Ajzen (2010) acknowledge that demographic background variables – i.e. ethnicity among others – often relate to differences in behavior. They refer to several studies that have found white and black adolescents to differ in their degree of being sexually active. These differences can be attributed to the different ethnic backgrounds and can also be found for belief components.[242] If it is evident that different ethnic groups show different manifestations of beliefs, it can also be assumed that depending on the cultural heritage, an application of the Theory of Planned Behavior will yield different results for different target populations. The strengths or even directions of the relationships between the constructs of the theory may differ depending on the society the research is carried out in. Generally it is also possible that a relationship cannot be found at all.[243] The majority of TPB applications have taken place in Western societies, but since the TPB has been applied many times, other cultural backgrounds can be found in the populations of interest as well. Some authors also dedicated their research to the influence of self-concepts. The following paragraph will give a few examples of how cultural and societal factors can influence applications of the TPB.

Ybarra & Trafimow (1998) conducted three experiments in which they manipulated the accessibility of private and collective self. They found that when primed on private self, attitudes had a stronger influence on intentions while people primed on collective self were more inclined to have a stronger subjective norm component. These results show that whichever concept was more readily accessible was used for the formation of a behavioral intention.[244] A study assessing the robustness of a modified version of the TPB was carried out in two countries which differ regarding both cultural and societal structures. Liñán & Chen (2009) used samples from Spain and Taiwan to test whether subjective norm has an indirect effect on intention. They argue that subjective norm can be seen as a kind of social capital that influences attitude and perceived control and therefore has an indirect effect on entrepreneurial intention. Spain is different from Taiwan in that it features a much more pronounced individualism than Taiwan. Interestingly, the results also show that the influence of subjective norm on attitude and perceived behavioral control is stronger in Taiwan than in Spain, suggesting that less individualism leads to a stronger effect of subjective norm. The comparison of both countries also shows that attitude has a stronger effect on intention in Spain whereas perceived control has a stronger effect in Taiwan (no direct effect of subjective norm can be found for either of

[239] Cf.: Ajzen 2005, p. 135.
[240] Cf.: Bandura 1977.
[241] Cf.: Coleman 1990, pp. 400–402.
[242] Cf.: Fishbein & Ajzen 2010, pp. 230–234.
[243] Cf.: Fishbein & Ajzen 2010, p. 192.
[244] Cf.: Ybarra & Trafimow 1998, p. 367.

the countries).[245] Schmidt, Tatarko & Amerkhanova (2013) used Russian data to test the TPB for entrepreneurial intention. They found significant effects for attitude and perceived behavioral control on intention, but the subjective norm component failed to exert a significant influence on intention. Comparing two regions in Russia, the authors observed a significant difference in the intention to found a business. Respondents from a region in central Russia showed a higher intention to do so than respondents from a more traditional region in the Caucasus.[246] For the study conducted here it remains to see if and how the cultural area that constitutes the setting of the research influences both the application and the results of the Theory of Planned Behavior. Differences to other applications may already influence the collection of the data and have further implications for the results of the model.

3.2.6 Assembly of the Items for the Measurement of the Latent Constructs

The Theory of Planned Behavior (TPB) is a fairly general theory that can be applied to research questions in very different fields. The analysis can be directed at any thinkable behavior that is of interest to the researcher. It is important that this behavior is stated clearly since attitude and behavior need to show a high level of correspondence for them to be connected (see Chapter 3.1). Because of this requirement to define the behavior very clearly it is necessary to adapt its formulation to the research question. This was done in accordance with the TACT elements proposed by Ajzen & Fishbein (see Chapter 3.2.1).[247] The aim is to analyze respondents' intentions to enhance the tourism supply in the next twelve months. But not only the activity to be studied requires precise formulation, also the single items for the measurements of the latent constructs need to be adapted to each application of the theory. Even if the same behavior were to be studied twice, but in different populations, e.g. once for elderly persons and once for younger ones, the items might have to be modified. A specific questionnaire was designed by the author to meet the particular demands of this research.[248] For the construction of belief-based measures it is necessary to elicit salient beliefs that the target population holds.[249] Salient beliefs are those "that are readily accessible"[250] for the respondent, in other words, they refer to what comes to mind when thinking about the behavior in question. In order to find out what these beliefs are, an elicitation study[251] was conducted. In this study, the respondents were asked to list advantages and disadvantages of carrying out the behavior, to name people who would approve of them doing the behavior and people who would not approve and to record factors that would foster and factors that would hinder them in performing the behavior.[252] If beliefs are only mentioned by very few people, they are not salient and therefore not included in the questionnaire.[253] Since both time and money restrict research – particularly when it is conducted abroad – the elicitation study was incorporated into a pretest of quantitative questions

[245] Cf.: Liñán & Chen 2009, pp. 594-598 and 607.
[246] Cf.: Schmidt, Tatarko & Amerkhanova 2013, pp. 29–31.
[247] Cf.: Ajzen & Fishbein 1977, p. 889.
[248] Cf.: Volz 2011.
[249] Cf.: Fishbein & Ajzen 2010, p. 184.
[250] Ajzen n.d.a, p. 2.
[251] An elicitation study contains open questions in order to obtain information on what respondents associate with the behavior under study. Six open questions were used: Two for each of the three constructs.
[252] Cf.: Fishbein & Ajzen 2010, p. 327.
[253] Cf.: Ajzen n.d.a, p. 5.

that already contained belief-items to be tested. These belief-items had been constructed after thorough research and with knowledge on the research regions. The open questions of the elicitation study were asked first so that respondents were not influenced by the items. By and large, the aspects that the previously formulated items covered were confirmed. Few aspects that had not been considered yet were mentioned in the elicitation study and were put into new items for the household survey (for more information on the course of action and the specific items see Volz 2011, pp. 67–80).

Having been applied many times over, there are manuals that give information on how to formulate the items for an application of the TPB. Ajzen himself supplies a sample questionnaire on his homepage. The questionnaire demonstrates the application of the TPB to examine class attendance. Examples of how to formulate direct measures of ATT, SN, PBC and INT, behavioral beliefs, control beliefs, normative beliefs, outcome evaluations, motivation to comply, power of control factors, past behavior and observed behavior are given.[254] Depending on the research objective, the relevant types of items can serve as a guideline to construct items for one's own purpose. The most important items to answer the research question of which psychological construct influences the behavioral intentions of the households in the research areas regarding an enhancement of their activities in the tourism sector the most are the direct measures of all four latent factors. Direct measures are more general without the inclusion of specific salient beliefs and give a global assessment of the constructs. In order to understand which aspects can be addressed to cause a change in intention, the informational foundation that is represented in the underlying beliefs of the constructs themselves has to be taken into account. The belief-based measures with behavioral, normative and control focus are derived from the salient beliefs of the elicitation study. These items are needed specifically for research that wants to derive interventions or recommendations.[255] They can also serve as means to determine convergent validity when correlated with the respective direct measures for a construct.[256] Furthermore outcome evaluations, motivations to comply and power of control factors can be used in order to incorporate subjective assessments of the importance of each respective issue. By creating multiplicative composites out of outcome evaluations, motivations to comply and power of control factors and the respective beliefs, the subjective importance of each belief is considered for each individual respondent.[257] This study did not assess a measure of actual behavior since this can only be done in a sequential design with a second survey period, asking the respondent after the defined period of time has elapsed, whether or not he or she carried out the behavior. Observed behavior was also not needed to answer the research questions, just as past behavior was not necessary for the analysis.

Likert scaling is usually used since it is a standard scaling procedure that generally produces good indicators for latent constructs. Another such tool is the semantic differential for the assessment of attitude.[258] The size of the scale for both the semantic differentials and Likert scales depends on the

[254] Cf.: Ajzen n.d.b.
[255] Cf.: Fishbein & Ajzen 2010, pp. 331f.
[256] Cf.: Francis, Johnston, Eccles et al. 2004, p. 47.
[257] Cf.: Francis, Eccles, Johnston et al. 2004, pp. 14-16, 18-20 and 22-24.
[258] Cf.: Fishbein & Ajzen 2010, p. 184.

level of abstract thinking that can be expected from the respondents. The higher the level of abstract thinking, the larger the scale can be. In general it is recommended to use five to nine scale points.[259] For applications of the TPB, scales with seven scale points are found frequently, but five scale points are used as well. Francis, Eccles, Johnston et al. (2004) use seven scale points in their manual for most of their examples, so does Ajzen (n.d.b) in his example questionnaire. Studies by Hrubes, Ajzen & Daigle (2001), Lowe, Eves & Carroll (2002) and Knowlden, Sharma & Bernard (2012) are examples of applications with seven scale points. Hansson, Ferguson & Olofsson (2012) used five scale points for their measurements. Some authors also decide to mix the use of different scales, e.g. Sparks & Pan (2009) use five and seven scale points for their items. The pretest showed that the respondents in the research regions had some difficulties with the scales that featured seven scale points. It was therefore decided to use five scale points.[260] In their analysis of Swedish farmers, Hansson, Ferguson & Olofsson (2012) applied a scale with five points to a similar group of people as well. Schroeder, Chaplin & Isselstein (2015) also use five scale points in a TPB application with British farmers. The scale points in the study at hand were also fully verbalized for the household survey in order to give the respondents a meaning for each point.

For the complete questionnaire with all items see Appendix A 1.

3.3 Collectivist Culture as a Macro-Level Context Factor

Chapter 3.2.5 discussed that applications of the Theory of Planned Behavior can result in differing strengths of the relationships between the constructs depending on the culture in which the research is carried out. The following elaborations will give information on the location of the Georgian culture along the collectivism-individualism scale compared to other cultures and insights into some of Georgia's cultural characteristics.

The cross-cultural research program Global Leadership and Organizational Behavior Effectiveness (GLOBE) analyzed 62 societies regarding societal and organizational culture and leadership styles. Georgia is one of the countries in which culture was studied. The researchers developed nine cultural dimensions in order to categorize cultures. These dimensions were named "Uncertainty Avoidance, Power Distance, Institutional Collectivism, In-Group Collectivism, Gender Egalitarianism, Assertiveness, Future Orientation, Performance Orientation, and Humane Orientation."[261] Georgia is grouped into the Eastern Europe cluster along with Russia, Poland, Kazakhstan, Hungary, Albania, Slovenia and Greece. The countries were grouped according to e.g. geography, but also historical accounts. One factor that was crucial for the Eastern Europe cluster was soviet hegemony, but it is not the only rationale for the classification. Also the mountainous landscape in these countries poses a significant similarity which encourages group cohesiveness.[262] Within the GLOBE study, collectivism was analyzed in four categories: institutional collectivism practices, institutional collectivism values, in-group collectivism practices and in-group collectivism values. More important for the research at hand are the two in-group scales since the analysis units are households within their social networks

[259] Cf.: Porst 2009, p. 85.
[260] Cf.: Volz 2011, p. 63.
[261] House & Javidan 2004, p. 11.
[262] Cf.: Gupta & Hanges 2004, pp. 183 and 185f.

rather than institutions. The scale for in-group collectivism practices put a strong emphasis on families, while the in-group collectivism values scale had a broader focus and included pride in society altogether. 61 analyzed cultures were ranked according to their mean values on the scales, resulting in significantly differing mean scores for three groups (A, B and C) with higher rankings indicating more collectivism. Georgia received rank 34 (group B) in the in-group collectivism values rating and rank 2 (group A) in the in-group collectivism practices rating.[263] This shows that in the Georgian culture, collectivism practices are more manifest than collectivism values and compared to the other 61 cultures, only the Philippines show higher in-group collectivism practice scores than Georgia. Gelfand, Bhawuk, Nishii & Bechtold (2004) infer that

> *"[…] In-Group Collectivism practices seem to be part of a cultural syndrome in which there are close ties among family members, and in which people are concerned with others, are respectful of authority, and have fewer rules."*[264]

Western cultures, on the other hand, score low on this scale. It is characteristic of in-group collectivism values that authority is respected, few rules and little structure are present, while planning is short-term oriented.[265] According to Hofstede (1998) it is typical of collectivism that individuals are strongly integrated into cohesive in-groups which in turn demand their members to be loyal.[266] By and large collectivist cultures are characterized by an extended comprehension of who belongs to particular groups such as kinship and neighborhood. Tradition, prosocial values and restrictive conformity are the core values in a collectivist society and people belonging to an in-group have certain obligations. These assure that relations within the in-group work well.[267] Tkeshelashvili (2009) complemented the GLOBE results with a quantitative sample of 160 Georgian respondents and 30 qualitative interviews with people from the quantitative sample. She found that loyalty and family cohesion are important to Georgians and collective interests and broader societal interests are more important than individual goals. Individuals are generally dominant and confrontational in relationships but it is expected of them to follow their leaders. Problem solving is focused on current issues rather than long-term planning and strategic management. The treatment of women is unequal.[268] Surmanidze & Tsuladze (2008) highlight that there is a noteworthy coexistence of collectivist dispositions alongside individualist orientations at the personal level. On the one hand Georgians feature empathy with other people's feelings, interdependence and close emotional relationships and can therefore be classified as a collectivist culture. On the other hand they show focus on achievement and very strong sense of personal dignity and pride which are typical of individualist cultures. The pronounced sense of dignity is visible both on a personal and on a national level while conformity can be observed for in-group interactions. Mostly, the number of group members for social groups is small and outside such a group, insubordination is dominant.[269]

[263] Cf.: Gelfand, Bhawuk, Nishii & Bechtold 2004, pp. 463, 469 and 471.
[264] Gelfand, Bhawuk, Nishii & Bechtold 2004, p. 473.
[265] Cf.: Gelfand, Bhawuk, Nishii & Bechtold 2004, pp. 469 and 473f.
[266] Cf.: Hofstede 1998, p. 26.
[267] Cf.: Schwartz 1990, pp. 152f.
[268] Cf.: Tkeshelashvili 2009, pp. 122 and 126.
[269] Cf.: Surmanidze & Tsuladze 2008, p. 94.

These values are part of the macro-level conditions that shape the frame of action for an individual person (see also Chapter 2.4 for economic and situational conditions that influence the target population).[270] For the analysis in Chapter 5.4 and the interpretation of its results it is important to keep in mind that – although individualist tendencies can be found – the Georgian culture is considered to be collectivist. Crediting the strong social bonds and the high importance of the family it is likely that this will have implications on the formation of behavioral intentions. Ybarra & Trafimow (1998) pointed out the importance of culture for behaviors. Manipulating the accessibility of private and collective self they found that depending on whether a culture is individualistic or collectivistic, behaviors are more likely to be under attitudinal or normative control respectively.[271] They conclude that "a majority of behaviors in individualistic cultures are also likely to be attitudinally controlled. But in collectivistic cultures, where the collective self is stronger and more accessible, more behaviors are likely to be under normative control."[272]

[270] Cf.: Coleman 1990, pp. 400–402.
[271] Cf.: Ybarra & Trafimow 1998, p. 369.
[272] Ybarra & Trafimow 1998, p. 369.

4 Hypotheses

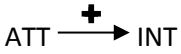
4.1 Hypotheses Deriving from the Theory of Planned Behavior

4.1.1 Hypotheses on Structural Model and Measurement Models

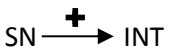
Chapter 3 establishes the theoretical framework for the analysis of behavioral intentions in order to gain an understanding of which factors and variables are important for private households in two research areas regarding an enhancement of touristic activities. The Theory of Planned Behavior (TPB) postulates several relationships between latent constructs and items that are used to measure them. Incorporating the examined behavior (see Chapter 3.2.1), specific hypotheses derive from the application of the TPB to the research objective. The corresponding hypotheses are formulated in the following paragraphs. Together, these hypotheses lead to the formation of a comprehensive model.

The basic idea of the TPB is that there are three main latent factors that explain intention (INT).

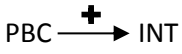
Hypothesis 1 The more positive the attitude (ATT) towards an enhancement of tourism supply in the next twelve months, the higher is the intention (INT) to enhance tourism supply in the next twelve months.



Hypothesis 2 The higher the subjective norm (SN) towards an enhancement of tourism supply in the next twelve months, the higher is the intention to enhance tourism supply in the next twelve months.



Hypothesis 3 The higher the perceived behavioral control (PBC) towards an enhancement of tourism supply in the next twelve months, the higher is the intention to enhance tourism supply in the next twelve months.

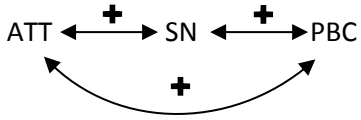


PBC can also play a moderating role within the TPB. Aside from the direct influence from PBC on INT it is hypothesized that PBC can moderate the effect of ATT and SN on INT.[273] This issue will be addressed in Hypothesis 8.

Furthermore, the TPB assumes that these three explanatory factors are not independent from one another. There are no assumptions on the directionality of such dependencies, just that the constructs correlate positively.[274]

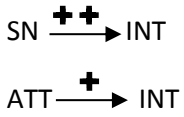
[273] Cf.: Fishbein & Ajzen 2010, pp. 201–203; Yzer 2007, pp. 111–115.
[274] Cf.: Fishbein & Ajzen 2010, pp. 21–23, 1975, p. 315.

Hypothesis 4 Attitude, subjective norm and perceived behavioral control correlate.



Given the pronounced family cohesion in the Georgian society, the factor SN is likely to have a stronger effect on INT than the other factors.[275] Ybarra & Trafimow (1998) conducted research on the relative weights of attitude and subjective norm. They found that in collectivistic cultures it is more likely to find a stronger influence of normative control whereas individualistic cultures are more strongly linked to attitudinal control.[276] Therefore, it is assumed that since the research population belongs to a collectivist culture (see Chapter 3.3), subjective norm will exhibit a stronger influence on intention than attitude. This hypothesis is a contextual hypothesis in the sense that the collectivist nature of the Georgian culture on the macro-level defines the framework in which the individual acts on the micro-level as it is proposed in Coleman's boat (see Chapter 2.4).

Hypothesis 5 The partial regression weight of subjective norm on intention is larger than the partial regression weight of attitude on intention.



The hypotheses so far all relate to the core model of the TPB which is the structural model in the structural equation model. In order to be able to test the structural model, the latent constructs need to be defined. Two kinds of variables are distinguished here: reflective indicators that are caused by the latent factor and formative indicators that compose the latent factor.[277] These are used for the measurement models of the latent constructs. Following the TPB, reflective items (direct measures) are influenced by all four latent constructs, whereas formative indicators (indirect measures) influence the three explanatory latent factors (see Chapter 3.2.2 for detailed explications). Behavioral, normative and control beliefs are the respective formative antecedents of the global constructs attitude, subjective norm and perceived behavioral control. This leads to the following set of hypotheses of correspondence regarding direct measures:

Hypothesis 6.1 The higher the **intention** to enhance tourism supply in the next twelve months, the higher the agreement with variable int1br "I expect to enhance tourism supply in the next year."

Hypothesis 6.2 The higher the **intention** in the next twelve months, the higher the agreement with variable int2br "I intend to enhance tourism supply in the next year."

[275] Cf.: Tkeshelashvili 2009, p. 126.
[276] Cf.: Ybarra & Trafimow 1998, p. 369.
[277] Cf.: Diamantopoulos & Winklhofer 2001, pp. 269–271; Jarvis, MacKenzie & Podsakoff 2003, pp. 200–203; Bollen & Davis 2009, pp. 520f.

Hypothesis 6.3 The more positive **attitude** towards an enhancement of tourism supply in the next twelve months, the higher the value of variable attd10br "For me to enhance tourism supply in the next year is … wrong (1) - right (5)."

Hypothesis 6.4 The more positive **attitude** towards an enhancement of tourism supply in the next twelve months, the higher the value of variable attd11br "For me to enhance tourism supply in the next year is … reckless (1) - careful (5)."

Hypothesis 6.5 The more positive **attitude** towards an enhancement of tourism supply in the next twelve months, the higher the value of variable attd12br "For me to enhance tourism supply in the next year is ... stupid (1) - smart (5)."

Hypothesis 6.6 The higher the **subjective norm** in favor of an enhancement of tourism supply in the next twelve months, the higher the agreement with variable snd1br "Most people who are important to me think that ... I should not (1) - I have to (5) ... enhance tourism supply in the next year."

Hypothesis 6.7 The higher the **subjective norm** in favor of an enhancement of tourism supply in the next twelve months, the higher the agreement with variable snd3br "People who are important to me want me to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5)."

Hypothesis 6.8 The higher the **subjective norm** in favor of an enhancement of tourism supply in the next twelve months, the higher the agreement with variable snd4br "I feel obliged to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5)."

Hypothesis 6.9 The higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months, the higher the agreement with variable pbcd1br "Whether I enhance tourism supply in the next year is entirely up to me … strongly disagree (1) - strongly agree (5)."

Hypothesis 6.10 The higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months, the higher the agreement with variable pbcd2br "For me to enhance tourism supply in the next year is … very difficult (1) - very easy (5)."

Hypothesis 6.11 The higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months, the higher the agreement with variable pbcd4br "For me to enhance tourism supply in the next year is … very impossible (1) - very possible (5)."

The hypotheses regarding indirect measures (i.e. behavioral, normative and control beliefs regarding attitude, subjective norm and perceived behavioral control respectively) are as follows:

Hypothesis 7.1 The higher the agreement with variable atb1br "Enhancing tourism supply in the next year will cause me to be more stressed", the more positive the **attitude** towards an enhancement of tourism supply in the next twelve months.

Hypothesis 7.2 The higher the agreement with variable atb2br "Enhancing tourism supply in the next year will help me lead a better life", the more positive the **attitude** towards an enhancement of tourism supply in the next twelve months.

Hypothesis 7.3 The higher the agreement with variable atb3br "Enhancing tourism supply in the next year will increase my income", the more positive the **attitude** towards an enhancement of tourism supply in the next twelve months.

Hypothesis 7.4 The higher the agreement with variable atb4br "Enhancing tourism supply in the next year will mean risking the loss of money", the more positive the **attitude** towards an enhancement of tourism supply in the next twelve months.

Hypothesis 7.5 The higher the agreement with variable atb5br "Enhancing tourism supply in the next year will cost me free time", the more positive the **attitude** towards an enhancement of tourism supply in the next twelve months.

Hypothesis 7.6 The higher the agreement with variable snb1br "Other people in my neighborhood would not (1) … would (5) enhance tourism supply in the next year", the higher the **subjective norm** in favor of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.7 The higher the agreement with variable snb2br "The government allows me to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5)", the higher the **subjective norm** in favor of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.8 The higher the agreement with variable snb3br "My family thinks that I should not (1) … I have to (5) enhance tourism supply in the next year", the higher the **subjective norm** in favor of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.9 The higher the agreement with variable snb4br "My friends would not (1) … would (5) approve of me enhancing tourism supply in the next year", the higher the **subjective norm** in favor of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.10 The higher the agreement with variable pbcb1r "How often do you feel ill or tired? – Very frequently (1) … very rarely (5)", the higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.11 The higher the agreement with variable pbcb2r "How often do you encounter unanticipated events that decrease your time budget? – Very frequently (1) … very rarely (5)", the higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.12 The higher the agreement with variable pbcb3r "How likely is it for you to get a loan from a bank? – Very unlikely (1) … very likely (5)", the higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.13 The higher the agreement with variable pbcb4r "How likely is it for you to find workers you can hire? – Very unlikely (1) … very likely (5)", the higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months.

Hypothesis 7.14 The higher the agreement with variable pbcb5r "How often do unanticipated financial requirements (e.g. to replace broken tools or machinery) place burdens on your financial resources? – Very frequently (1) … very rarely (5)", the higher the **perceived behavioral control** of an enhancement of tourism supply in the next twelve months.

The following figure summarizes the hypotheses on the structural core model – including the contextual hypothesis – and the hypotheses on the formation of latent measurement models.

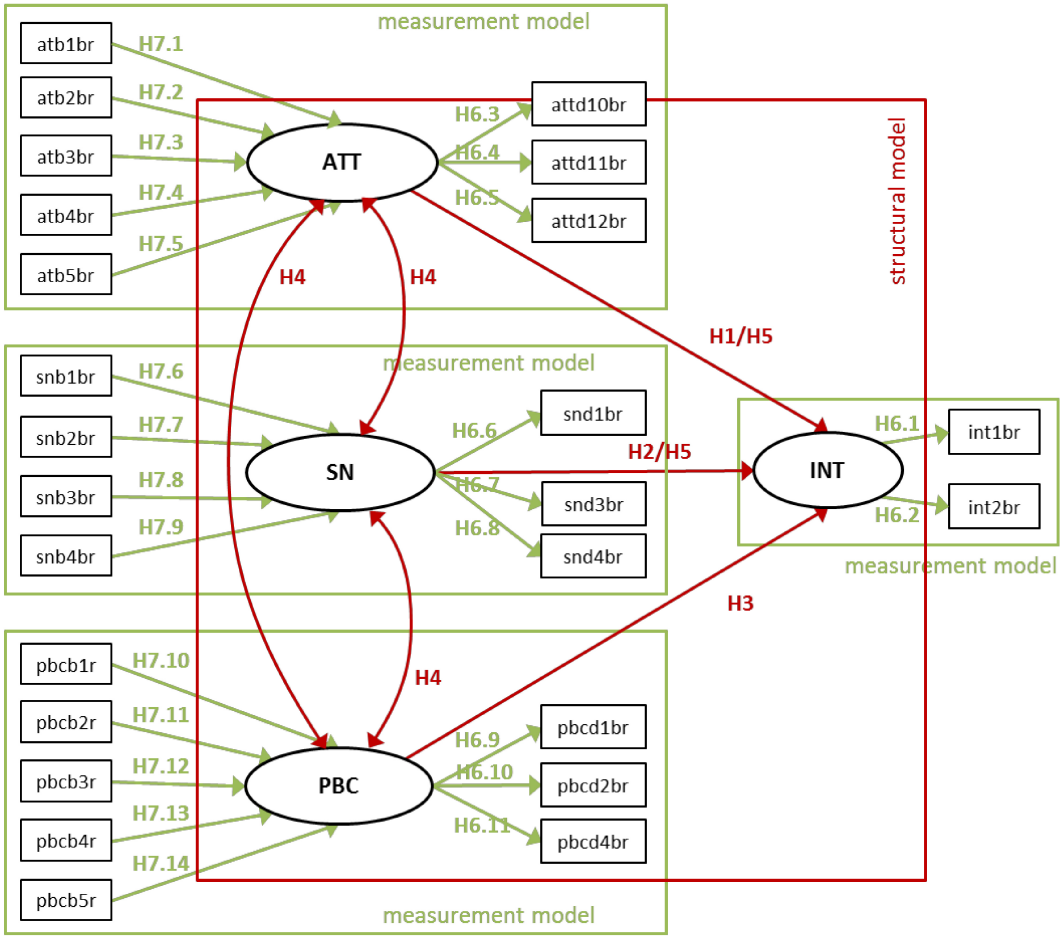


Figure 9: Visual representation of basic TPB hypotheses

Note: INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control, H = hypothesis. Arrows mark regressions, double-headed arrows mark correlations. All formative indicators are allowed to correlate with one another but for ease of visual representation these double-headed arrows are not depicted. Rectangular boxes represent items, ellipses represent latent factors. Objects marked in red refer to the structural model, objects marked in green refer to the measurement models. Source: Own illustration.

4.1.2 Hypothesis on Moderation Effect of Perceived Behavioral Control

Chapter 3.2.3 illustrated the ambiguous conceptions regarding the role of PBC within the TPB. Whereas the TPB originally postulates that PBC has a causal influence on INT just like ATT and SN, it is also discussed if PBC has a moderating effect on the relationships of ATT on INT and SN on INT.[278] The theoretical consideration behind this assumption is that if someone perceives low control, it is deemed likely that the influence of ATT on INT and SN on INT for him or her will be lower than for a person who sees him- or herself able to carry out the behavior. Methodologically this should result in significantly larger path coefficients from ATT to INT and SN to INT when comparing households with high PBC to households with low PBC.

[278] Cf.: Yzer 2007.

Hypothesis 8 The structural paths from attitude and subjective norm to intention are significantly higher for households with high perceived behavioral control than for households with low perceived behavioral control.

One way to test this is by removing the PBC-component from the model and using the information gained from that construct to split the sample into two groups, namely those high in PBC and those low in PBC. The structural paths leading to INT can then be compared for both groups, as Figure 10 shows.

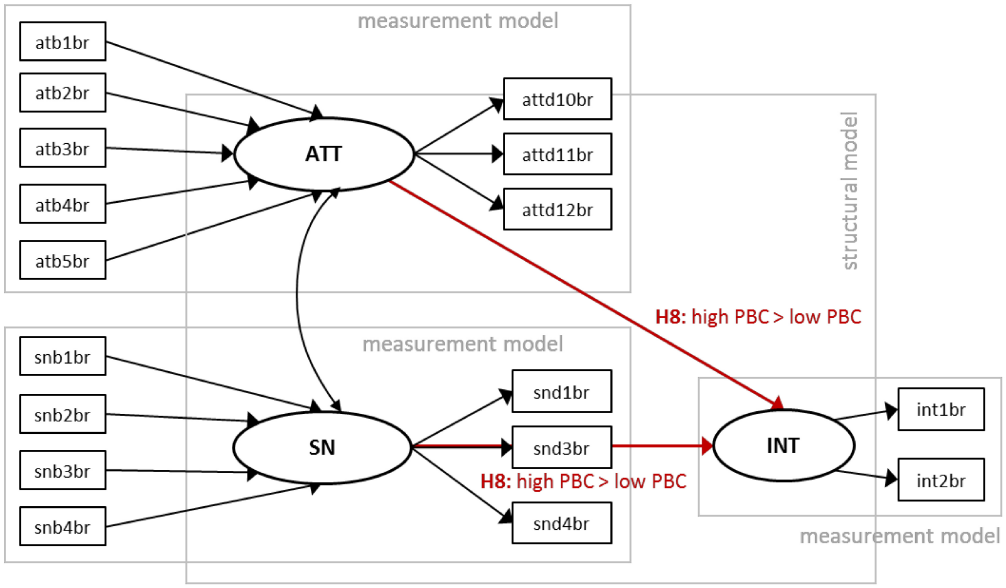


Figure 10: Visual representation of PBC moderation

Note: INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control, H = hypothesis. Arrows mark regressions, double-headed arrows mark correlations. All formative indicators are allowed to correlate with one another but for ease of visual representation these double-headed arrows are not depicted. Rectangular boxes represent items, ellipses represent latent factors. Objects marked in red highlight the hypothesis. Source: Own illustration.

4.1.3 Hypotheses on Background Variable

Fishbein & Ajzen (2010) explicitly state that background factors can be included in the analysis of the TPB. Although they claim that INT is explained by ATT, SN and PBC, they do not deny that further variables can exert an influence as well. The authors do, however, claim that these variables do not directly affect INT but that the influence of background variables is fully mediated by the explanatory constructs postulated by the TPB. Therefore, one of the hypotheses explicitly states that there is no direct effect from the background variable on intention. The underlying idea is that people experience things differently depending on varying characteristics which become apparent through certain measurable background factors. These in turn influence the beliefs and the formation of the explanatory latent constructs. Since only beliefs that have a significant influence on latent constructs are empirically connected to these, it is hypothesized that mediation only takes place via significant beliefs. An analysis of background factors can foster knowledge on possible origins of beliefs.[279] A

[279] Cf.: Fishbein & Ajzen 2010, pp. 224-227 and 253. See also Chapter 3.2.4.

precondition for mediational effects is that the mediator itself has a significant influence on the outcome variable.[280]

The sample for the current analysis consists of households rather than single persons, which is why some of the typical demographic variables such as e.g. gender and age are not as straightforward as in analyses of single persons. The households within the sample do however feature different types and intensity of involvement in touristic activities. Chapter 5.3.5 describes the involvement of households in the tourism sector. It is assumed that households offering services to tourists have some experience with tourism. Therefore, current involvement in tourism is considered as a proxy for experience. It is also assumed that as a whole, this experience is positive because if it were generally negative, households would probably have stopped their activities in the tourism sector. Depending on the number of different kinds of services offered, the experience is larger and more diverse for those households that diversify their activities by e.g. offering rooms for rent and guided tours. Especially in the case of PBC experience leads to a more realistic assessment of possible threatening and beneficial factors. The mediated effect through PBC is thus hypothesized to be larger than the effect mediated through ATT and SN. These explanations lead to the following hypotheses.

Hypothesis 9 Experience has a positive influence on behavioral beliefs which significantly influence attitude (behavioral beliefs mediate the influence of experience on attitude).

Hypothesis 10 Experience has a positive influence on attitude.

Hypothesis 11 Experience has a positive influence on normative beliefs which significantly influence subjective norm (normative beliefs mediate the influence of experience on subjective norm).

Hypothesis 12 Experience has a positive influence on subjective norm.

Hypothesis 13 Experience has a positive influence on control beliefs which significantly influence perceived behavioral control (control beliefs mediate the influence of experience on perceived behavioral control).

Hypothesis 14 Experience has a positive influence on perceived behavioral control.

Hypothesis 15 Experience has no direct effect on intention.

Hypothesis 16 Experience has an indirect effect on intention which is mediated through attitude, subjective norm and perceived behavioral control.

Hypothesis 17 Experience has an indirect effect on intention which is mediated through beliefs which significantly influence attitude, subjective norm and perceived behavioral control.

[280] Cf.: Baron & Kenny 1986, p. 1176.

Hypothesis 18 The indirect effect of experience on intention mediated through perceived behavioral control is significantly larger than the mediated effect through attitude and subjective norm.

Hypothesis 9 through Hypothesis 18 can be depicted as follows.

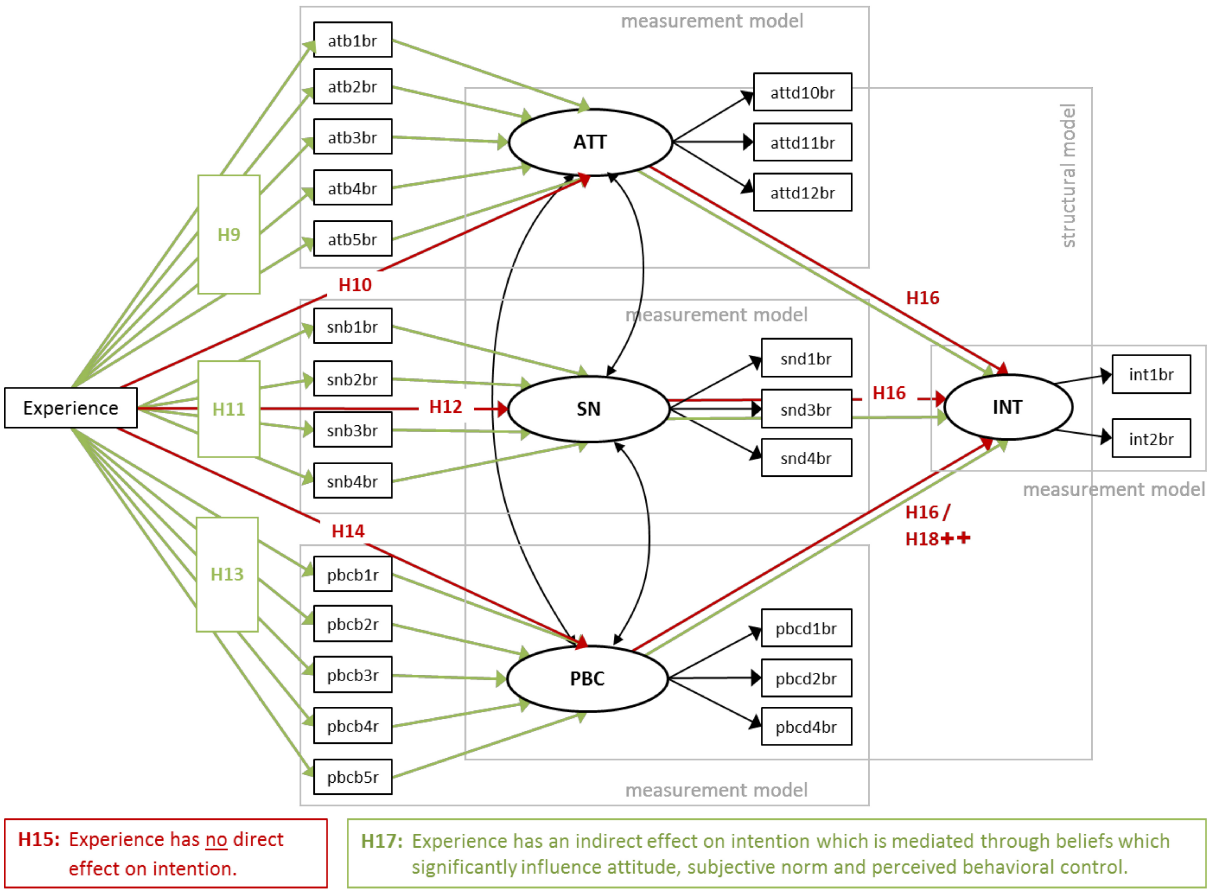


Figure 11: Visual representation of hypotheses on background variable

Note: INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control, H = hypothesis. Arrows mark regressions, double-headed arrows mark correlations. All formative indicators are allowed to correlate with one another but for ease of visual representation these double-headed arrows are not depicted. Rectangular boxes represent items, ellipses represent latent factors. Objects marked in red refer to the structural model, objects marked in green refer to the measurement models. Source: Own illustration.

All the hypotheses that are related to the TPB will be tested in Chapter 5.4. A summary of rejected and accepted hypotheses will be presented in Chapter 5.4.6.

4.2 Hypotheses on Group Differences

Aside from the hypotheses presented in the previous section that are based on the Theory of Planned Behavior (see Chapter 3.2), further hypotheses can be developed based on certain features of the study regions. Chapter 2.2 informed on the characteristics of the two study regions Kazbegi and Borjomi. While they share the fact that both are mountainous and neither of them has a central location within Georgia, one difference that can be discerned is that although Stepantsminda held a sanatorium in soviet times, the private households were not much involved in tourism at that time. It

figures that private households in the Borjomi region are more likely to be involved in tourism than in Kazbegi due to the longer tradition of touristic involvement.

Hypothesis 19 Significantly more households are involved in tourism supply in Borjomi than in Kazbegi.

Likewise, it is probable that of the households that are currently involved in touristic offers, the households in Borjomi have been involved in tourism for a longer time than those in Kazbegi.

Hypothesis 20 Households in Borjomi have been involved in tourism for significantly more years than households in Kazbegi.

Another difference between the two regions is that tourism activities in Kazbegi mainly take place during the summer time while Bakuriani is a winter hot-spot. With its focus on winter tourism, Bakuriani mostly relies on skiing while the activities in Kazbegi are more diverse with options of mountain climbing, hiking, cultural tours, parasailing etc. Therefore, the range of offers should be more diverse in Kazbegi than in Borjomi.

Hypothesis 21 The number of touristic offers per household is significantly higher in Kazbegi than in Borjomi.

The first field visit and the pretest showed that some people leave their homes in Kazbegi and Borjomi for some time of the year to live in other parts of Georgia (mostly in the capital). This is in part related to the seasonality of tourism. It is expected that Kazbegi is dominated by people leaving in winter while Borjomi is dominated by people leaving in summer.

Hypothesis 22 The number of people leaving in winter is significantly higher in Kazbegi than in Borjomi.

Hypothesis 23 The number of people leaving in summer is significantly higher in Borjomi than in Kazbegi.

Infrastructure is a limiting factor for tourism. Particularly the smaller villages are more difficult to reach, which is why it is postulated that aside from regional differences, differences may also occur within regions. Due to the more difficult access of smaller villages it is assumed that tourism activities are prevalent in the main villages compared to the smaller ones.

Hypothesis 24 The share of households involved in tourism offers is significantly larger in the main villages than in the smaller ones.

Another difference is assumed to be found between the two main villages in comparison with the smaller villages in each region. The main villages Stepantsminda and Bakuriani hold certain public institutions such as e.g. municipality, police and larger schools which offer wage employments. Such institutions can also be found in the smaller villages, but to a lesser degree. It is therefore hypothesized that income from wage employment (outside the agricultural and touristic sector) is more common in the main villages than in the smaller ones.

Hypothesis 25 The share of households mentioning the source of income “wage employment (excluding agricultural and touristic sector)” is significantly larger in the main villages than in the smaller ones.

This leads to the assumption that if a source of income is less common, overall income is lower in the smaller villages than in the main villages because there is no other source of income for compensation.

Hypothesis 26 Average monetary income is significantly higher in the main villages than in the smaller ones.

These hypotheses will be tested in Chapter 5.3 in the context of the presentation of descriptive data regarding the contents of the hypotheses. A summary of rejected and accepted hypotheses will be presented in Chapter 5.3.6.

5 Empirical Study

5.1 Data Collection

The National Statistics Office of Georgia (GeoStat) supplies much data and also conducts an agricultural census, but data is often supplied for aggregated areas and is not displayed for single villages. Moreover, the questions contained in the agricultural census may provide a useful overview, but since they are not intended to answer the research questions posed in this work, a targeted survey was designed. This survey was conducted in the interdisciplinary, international research project "Analysing Multiple Interrelationships between Environmental and Societal Processes in Mountainous Regions of Georgia" (AMIES) which was funded by the VolkswagenStiftung.[281] Since the unit of analysis was to be the economic entity of people living and working together for one common household income, the survey was directed at households rather than questioning single individuals. According to the Organisation for Economic Co-operation and Development (OECD) (2001), people "living together who make common provision for food or other essentials for living"[282] are considered to be a household. These people can have a common budget and can be either related or unrelated. Data on household level was collected in a quantitative survey during June and July 2011. The questionnaire had been developed within the AMIES project, tested in a pretest in September 2010 and modified where necessary.[283] The interviews were carried out by ten Georgian students in Georgian. In the village of Tsikhisjvari the population is mostly of Greek origin and some of the respondents (i.e. 10 of the 24 questioned households) spoke better Russian than Georgian, so the interviewers used Russian for explanations. Before starting the interviews, the interviewers were given basic information about the AMIES project and its aims so that they would be able to explain the reason for the survey to the respondents. A debriefing with the interviewers prior to the first interview was used to make everyone familiar with the questionnaire. Instructions on how to fill out certain parts of the questionnaire (especially where complex tables were used) and some additional information were handed to the interviewers in writing and open questions were resolved. Since the questions often involved information on the whole household, the interviewers were instructed to look for persons who have knowledge on the activities of the whole household and are involved in the decision making process. Before approaching respondents, the interviewers got together in teams of two people and conducted a role play where one person acted to be the respondent and the other was the interviewer. This further helped getting familiar with the questionnaire and getting used to the interviewing situation. For the very first interview, interviewers went in teams of two people to one household to be able to help each other if questions came up during the interview. After the interview, respondents were given a small package of coffee to express gratitude for their time. Once every day a meeting was held with all interviewers where they reported to the principal investigator about the process of interviews and raised questions were discussed. The sample was a

[281] The project was carried out by researchers from the Center for international Development and Environmental Research (ZEU) and other faculties of Justus Liebig University Giessen in cooperation with Ilia Chavchavadze State University (Tbilisi) and Ivane Javakhishvili Tbilisi State University.

[282] Organisation for Economic Co-operation and Development (OECD) 2001.

[283] For further information on the development of the questionnaire, the conducted pretest and ensuing modifications see Volz 2011.

stratified sample, in which the first strata of the research regions and villages were selected according to theoretical considerations (see Chapter 2.2), the number of selected households per village was proportional to the number of inhabitants per village and the selection of households followed random route sampling.[284] The interviewers carried maps of the villages with them. These were used to segment areas among interviewers and approximate locations of households were marked. This provided a visual representation of the distribution of interviews throughout the villages. Furthermore, interviewers were instructed to approach every third or fourth house in order to achieve some degree of randomness. Unfortunately there was no additional household data available that would have allowed a quota sampling based on more detailed information.

The questionnaire itself contained several modules that provided the main topics. These topics are demographics, sources and composition of income, land owned before and after the land reform, land use, activities in the tourism sector, statements on influence and cooperation and last but not least items on intended behavior (for the complete questionnaire see Appendix A 1). Initially it had been planned to analyze behavioral intentions regarding two activities: an enhancement of tourism supply and an enhancement of animal husbandry. This idea was dropped later on since it turned out to be impractical due to data quality and complexity of analyses. The items for the analysis of these two behavioral intentions were handed to the interviewers on separate sheets of paper. Not all respondents were willing to fill out these modules, therefore the amount of cases analyzed in Chapter 5.4 (see explications at the beginning of Chapter 5.4) deviates from the sample size for Chapter 5.3.

It should be noted that while the survey had already started, a mistake in one of the filter questions was detected. In Q 36 it says that one should move to Q 65 if the answer is “No” when it ought to say that one should move to Q 41. Fortunately it was already discovered on the first day of interviewing, so in the daily evening rounds the interviewers were instructed to redirect to Q 41 if a respondent answered “No” to Q 36. However, three interviews had taken place where it cannot be traced anymore if the wrong filter question led to falsely skipped questions (namely IDs 10701, 10801 and 10901). These three cases have to be excluded from any analyses involving questions 37-64. A second mistake regarding a filter question was noticed after the survey had taken place. Q 71 redirects to Q 79 instead of Q 77. It is therefore possible that households who do not offer accommodation were not asked the questions regarding their income from touristic activities and the financial sources for the development of touristic activities, but these variables were not subject to this analysis.

5.2 Sample Characteristics

Altogether, 301 households were included in the survey. The samples were distributed across both research regions. About half of the sample was taken from Kazbegi (n=154) and the other half from Bakuriani (n=147). Within the regions, the share of households questioned per village was adapted to the amount of inhabitants per village[285]. Consequently, the largest share of respondents was

[284] For a discussion of this approach and implications for representativeness see Chapter 6.1.1.

[285] The most recent available population census at the time of the design of the study was from the Georgian population census in 2002 (National Statistics Office of Georgia (GeoStat) 2013c).

questioned in the largest villages and smaller shares in the smaller villages. Following the exact proportion of inhabitants per village would have resulted in only sampling two or three households in the smallest villages. In order to still be able to make some reasonable statements about the smaller villages, it was tried to question at least ten households per village. Table 2 shows the population data and respective sample size for each village that was part of the investigation.

Table 2: Population and sample size per village

	Population (census 2002)	Envisaged sample size	Actual sample size	Percent (actual sample size)
Kazebegi				
Stepantsminda (+ Gergeti)	1783	85	92	30.6
Sno	418	25	24	8.0
Kanobi	182	10	9	3.0
Juta	62	10	9	3.0
Zemo + Kvemo Mleta (Dusheti district)	313	20	20	6.6
Borjomi				
Bakuriani	1985	55	55	18.3
Tsikhisjvari	644	25	24	8.0
Bakurianis Andeziti	514	20	18	6.0
Didi Mitarbi	48	10	10	3.3
Tsagveri	1051	40	40	13.3
Total	**7000**	**300**	**301**	**100**

Source: Own data and National Statistics Office of Georgia (GeoStat) (February 2013).

Households differ from single persons as research units insofar as some of the typical socio-demographic variables such as e.g. gender, age, occupation or highest level of education cannot be assessed as a single value for a household. In order to give an overview of some demographic features of the households, variables that inform on basic characteristics of households are reviewed in the following table.

Table 3: Average number of household members, average monthly income, average number of children and elderly persons per household per village

	Number of household members			Total monthly household income in Georgian lari			Children (14 years and younger) per household			Elderly persons (60 years and older) per household		
	N	**Mean**	**SD**	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**	**N**	**Mean**	**SD**
Stepantsminda + Gergeti	92	4.098	2.154	70	436.47 [a]	635.8	90	0.411	0.733	90	0.933	0.747
Sno	24	3.208	2.105	16	203.64	226.8	23	0.348	0.885	23	0.870	0.694
Kanobi	8*	4.250	1.165	7	310.24	315.9	8	0.375	0.744	8	1.000	0.926
Juta	9	3.444	1.81	4	115.42 [a]	60.6	9	0.778	0.972	9	1.111	0.782
Zemo + Kvemo Mleta	20	4.300	1.78	16	271.04	319.3	19	0.474	1.020	19	0.842	0.834
Bakuriani	55	4.345	2.119	42	722.61	1435.1	54	0.519	0.885	54	0.833	0.885
Tsikhisjvari	24	4.042	2.971	21	193.57	163.0	23	0.696	1.020	23	1.261	0.810
Bakurianis Andeziti	18	4.333	1.372	15	402.54	467.6	18	1.222	0.878	18	0.611	0.778
Didi Mitarbi	10	4.500	2.321	10	236.50	312.3	10	0.900	1.287	10	0.400	0.516
Tsagveri	40	3.575	1.838	34	277.81	200.5	40	0.475	0.816	40	1.100	0.810
Total	**300**	**4.023**	**2.099**	**235**	**395.93**	**740.8**	**294**	**0.537**	**0.88**	**294**	**0.922**	**0.799**

Note: N = number of valid cases, SD = standard deviation. * One case was excluded because it is an outlier. [a] Mean values differ significantly. Source: Own data.

On average, households consist of four members with a standard deviation of two. There is no significant difference between the means of household members of different villages. The average monthly household income is highest in the two main villages Bakuriani and Stepantsminda which also show the largest standard deviations. A significant mean difference was found for Stepantsminda and Juta[286]. The members of the households were grouped into different age categories to get an impression of how many people can contribute to subsistence activities. The pension age in Georgia is 60 years for women and 65 years for men.[287] In 2011, the benefit for a pensioner was 80 GEL per month. On average, there are .92 persons that are 60 years or older per household, i.e. about one person per household is 60 years or older. According to the United Nations International Children's Emergency Fund (UNICEF), children of 14 years and younger are only allowed to help a limited number of hours with economic or domestic work.[288] Otherwise this work would be considered child labor. In the sample there are on average .54 children younger than 15 years per household. Comparing the numbers for children and elderly, it shows that there are generally more elderly than children per household with a reverse ratio in two cases (Bakurianis Andeziti and Didi Mitarbi). Subtracting children and elderly from the total number of household members shows that

[286] Since the Levene test showed that variances are unequal, the conservative test Tamhane-T2 (cf. Brosius 2008, p. 497) was used to test for mean differences.

[287] Cf.: Federal Office for Migration and Refugees and International Organization for Migration 2012, p. 9.

[288] Cf.: United Nations International Children's Emergency Fund (UNICEF) n.d. and Kan, Kimhi & Lerman (2006, p. 10) also use this range of age to refer to children.

on average, there are between 1.56 (Juta) and 3.2 (Didi Mitarbi) people in working age per household.

In the Kazbegi region, all respondents are of Georgian ethnicity, except for one respondent from Stepantsminda who considers himself Ossetian. For Borjomi the picture is a little more diverse. 16 % and 13 % of the respondents in Bakuriani are Ossetian and Armenian respectively. Tsikhisjvari has a large amount of people of Greek origin (in the sample 46 %), while Didi Mitarbi has some inhabitants of Ossetian ethnicity (20 % in the sample) and Bakurianis Andeziti has some inhabitants of Armenian ethnicity (17 % in the sample).

In some cases some members of the households leave the household seasonally. It was assumed that people in Kazbegi leave more often in winter time which faces difficulties due to the location of the region and that in Borjomi people leave more often in summer time because winter is the busiest season due to ski tourism. Table 4 displays how many household members leave in the respective season.

Table 4: Number and percentage of people leaving the household in winter or summer per region

Number of leaving household members	Kazbegi				Borjomi			
	Leaving in winter		Leaving in summer		Leaving in winter		Leaving in summer	
	N	%	N	%	N	%	N	%
0	97	63.0	147	95.5	128	87.1	138	94.5
1	17	11.0	1	.6	2	1.4	1	.7
2	17	11.0	3	1.9	8	5.4	5	3.4
3	7	4.5	1	.6	2	1.4	1	.7
4	8	5.2	1	.6	2	1.4		
5	4	2.6	1	.6	2	1.4		
6	1	.6			2	1.4	1	.7
7	2	1.3						
8	1	.6						
9					1	.7		
Total (valid)	154	100	154	100	147	100	146	100
Missing							1	0.7
Total							147	100

Source: Own data.

According to descriptive statistics, leaving in winter is more common for household members in the Kazbegi Region than in the Borjomi region. The Mann Whitney U test confirmed that there is a significant mean rank difference which indicates that the number of people leaving in winter is significantly higher in Kazbegi than in Borjomi. This confirms Hypothesis 22. In both regions, roughly 5 % of the responding households mentioned that members leave during the summer season. A Mann Whitney U test showed that there is no significant difference of the number of people leaving in summer between the two regions which lead to the rejection of Hypothesis 23.

5.3 Socio-Economic Living Conditions of the Local Population in the Research Areas

This chapter presents data on the socio-economic living conditions of the households. It combines data from monetary household income with information on agricultural production of the households and activities in the tourism sector. These elements are used to form a comprehensive overview of the overall living conditions of the households (summarized in Chapter 5.3.6). Since both tourism and agricultural activities are time-consuming, it is possible that households which are active in one of those sectors are not active in the other. After some basic information on income and activities regarding agriculture, Figure 16 addresses the simultaneous involvement of households in tourism and agricultural activities. The subsequent paragraph looks at touristic activities in more detail.

In most cases, results will be displayed in four groups. One each for the main villages of the regions (Stepantsminda, n=92 and Bakuriani, n=55) and one each for the smaller villages summarized per region (Kabzegi villages, n=62 and Borjomi villages, n=92). If there are notable differences between villages, a more appropriate way of displaying them is chosen.

5.3.1 Household Income & Sources of Income

Both research regions have seasonal tourism so that income differs depending on the time of year. The yield of agricultural activities also depends on the season. To accommodate variations in income throughout the year, respondents were asked to sum up the household's income from all sources for the past twelve months. This value was later on divided by twelve to compare the income with monthly values for the whole of Georgia from the National Statistics Office of Georgia (GeoStat) (2015b). The average household income for the separate research villages (see Table 3) already showed that income in the main villages Stepantsminda (average monthly: 436.47 GEL) and Bakuriani (average monthly: 722.61 GEL) is generally higher than in the smaller villages. Altogether, the average monthly household income in the Kazbegi villages is 237.86 GEL and 273.92 GEL in the Borjomi villages. The mean difference is not statistically significant. This rejects Hypothesis 26, but the higher values for the Borjomi groups suggest that income in the Kazbegi region is generally lower. In the year of the survey, the average monthly cash income (including transfers) for rural households all over Georgia was 412 GEL.[289] Figure 12 shows the distribution of income in the sample for the main villages Stepantsminda and Bakuriani in comparison with the smaller villages in both regions.

[289] Cf.: National Statistics Office of Georgia (GeoStat) 2015b.

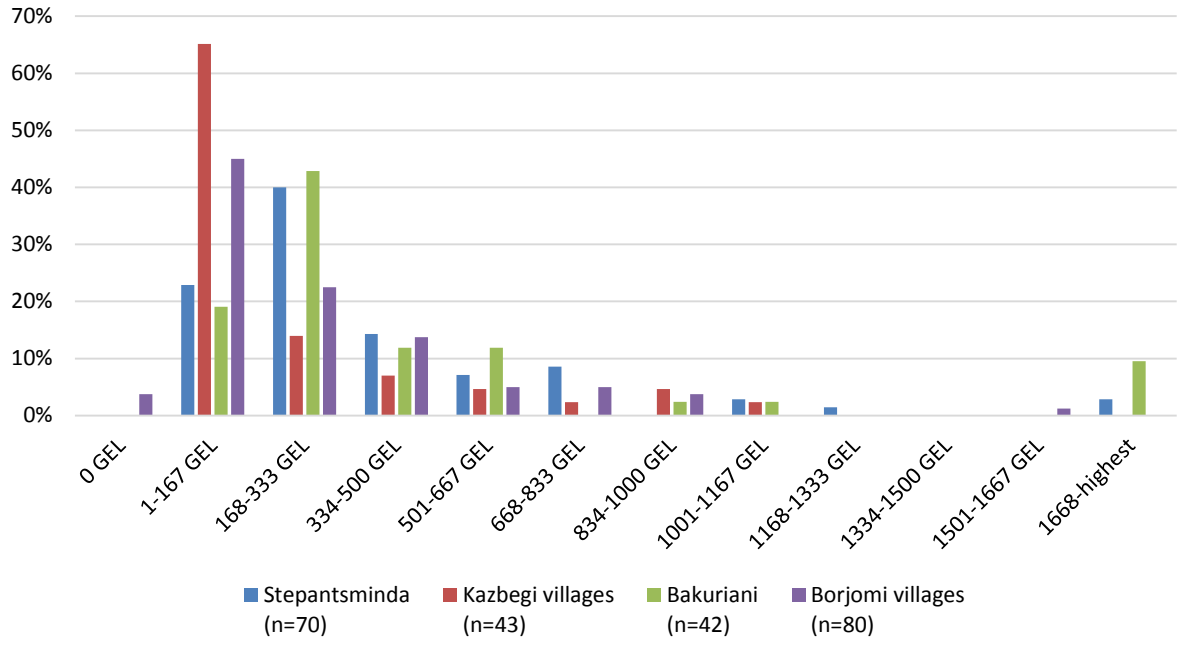


Figure 12: Total monthly household income[290] (valid percent of cases)
Note: GEL = Georgian Lari. Source: Own data.

In the lowest income range, the largest share of cases is from the Kazbegi villages, followed by the Borjomi villages. In this category there are slightly more cases from Stepantsminda than from Bakuriani. In the higher categories the amount of cases from the main villages is generally larger than from the smaller villages and the amount of respondents from both Bakuriani and Borjomi villages is larger than from Stepantsminda and Kazbegi villages. It has to be noted that there is also a number of respondents who refused to mention their income. It is not possible to determine whether these households would have changed the distribution or mean of income. Some people might also keep part of their income secret, e.g. because it results from illegal activities in the tourism sector.[291]

In addition to the amount of income, respondents were asked which income sources contribute to the income of the household. Many households have diverse sources of income, therefore, multiple answers were allowed for so that all income sources could be mentioned. The results are displayed in Figure 13. The sources of income are sorted by the number of overall listings in the whole sample and show the number of listings for main villages and smaller villages separately for each region.

[290] On July 1st in 2011, the exchange rate was 1 GEL = 0.415 € (OANDA 2011).
[291] Cf.: Ecovision – Union for Sustainable Development 2011, p. 18.

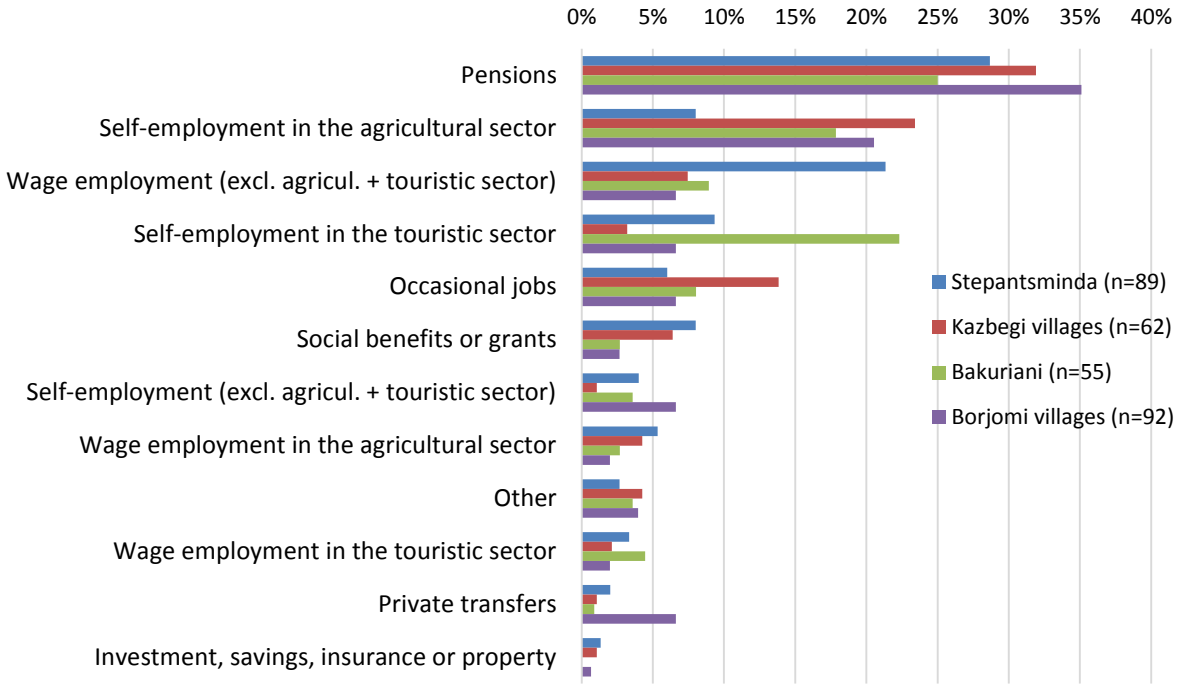


Figure 13: Sources of income sorted by number of overall listings
Note: Multiple answers possible. Source: Own data.

The source mentioned most frequently was by far pensions with 53 % of all households. In Georgia, women reach pension age when they are 60 years old and men when they are 65 years old.[292] In the smaller villages of Kazbegi and Bakuriani pensions are a more frequent income source than in the main villages of the regions. The second most important source of income is wage employment in sectors other than agriculture and tourism while wage employment in the mentioned sectors is less common than self-employment in both sectors. Hypothesis 25 postulates that the income source "wage employment (excluding agricultural and touristic sector)" is mentioned significantly more often in the main villages than in the smaller ones. A post hoc comparison[293] of the four groups confirmed that households in Stepantsminda mentioned wage employment significantly more often than households in the two groups comprising the smaller villages of both regions. This partly confirms the hypothesis. However, there is no significant difference between Bakuriani and any of the other three reference groups. Wage employment outside agriculture and tourism is not significantly more common in Bakuriani than in the other regions. The International Labour Organization (ILO) (1993) considers remuneration by wages (be it in cash or in kind) as paid employment jobs where a person holds a written or oral employment contract with e.g. a corporation, an institution or a household. Self-employment, on the other hand, refers to the person being in charge of operational decisions and being responsible for the enterprise while the remuneration depends on profits.[294] The amount of households that mentioned self-employment in

[292] Cf.: Federal Office for Migration and Refugees and International Organization for Migration 2012, p. 9.
[293] Tamhane's T2 was used since variances were not equal.
[294] Cf.: International Labour Organization (ILO) 1993, p. 2.

tourism as a source of income was exceptionally high in Bakuriani while wage employment other than in agriculture or tourism is most dominant in Stepantsminda. In both agriculture and tourism, self-employment is more likely than wage employment. Compared to the other groups, the smaller villages of Kazbegi show a high percentage of occasional jobs as a source of income while the Borjomi villages mentioned private transfers considerably more often than any other group.

It is important to note that the households in the research areas which are both rural have additional non-monetary income which is not accounted for in this presentation of monetary income and monetary income sources. Therefore, agricultural production that can serve as a source of non-monetary income and frequencies of households using this source will be displayed in chapters 5.3.2 5.3.3.

5.3.2 Livestock and Animal Products

Agricultural activities can be used for both the generation of monetary and non-monetary income. When asked whether they are involved in agricultural activities, 51 % of the households (n=291) answered affirmatively[295]. Comparing this value with the share of households that mentioned self-employment in agriculture as a source of monetary income (see Figure 13), one can see that at least double as many households (Kazbegi and Borjomi villages and Bakuriani) are producing agricultural outcomes, in the case of Stepantsminda there are even six times as many households involved in agricultural activities compared to the amount of households gaining income from self-employment in agriculture. It figures that agriculture is not only important for households that gain monetary income from this sector, but also for households that use it as a means of additional non-monetary income. This chapter will focus on livestock and the associated animal products before the next chapter turns to cultivation of land and its outcomes.

Livestock

The analysis shows that cows (including calves, 67 % in Kazbegi and 51 % in Borjomi) and poultry (67 % in Kazbegi and 48 % in Borjomi) are the kinds of animals that are owned the most by households of the sample. Sheep breeding was important for Georgia in the past, but has declined severely in the past two decades. Numbers of cattle have also declined in this time frame (see Chapter 2.1.3, Figure 3). Within the sample, 11 % in Kazbegi and 4 % in Borjomi mentioned owning sheep. The following tables show the distributions of the amounts of animals for the main villages compared to the smaller villages per region and the means and standard deviations based on the households that own the respective kind of animal. Along with information on the number of livestock, households which own the respective kind of animal were also asked about their consumption, selling and buying of such animals during the last twelve months. The information gained from these questions is presented in the texts following the tables.

[295] This value was slightly higher for the villages, with values of 55 % and 53 % for the Kazbegi and Borjomi villages respectively compared to 48 % and 49 % in Stepantsminda and Bakuriani respectively.

Table 5: Number of cows and calves

Number of cows and calves	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	40	43.5	11	17.7	30	54.5	42	45.7	123	40.9
1-5	45	48.9	38	61.3	22	40.0	38	41.3	143	47.5
6-10	5	5.4	11	17.7	3	5.5	9	9.8	28	9.3
11-15			2	3.2			2	2.2	4	1.3
30							1	1.1	1	0.3
40	1	1.1							1	0.3
107	1	1.1							1	0.3
Total (valid)	**92**	**100**	**62**	**100**	**55**	**100**	**92**	**100**	**301**	**100**
Mean (SD)*	5.21	(15.44)	3.43	(2.82)	2.88	(1.88)	4.50	(4.57)	4.17	(8.83)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

In both regions, more households in the smaller villages own cows than households in the main villages Stepantsminda and Bakuriani. While comparing the regions, more households in Kazbegi mentioned owning cows. Bakuriani is the only group in which less than half of the households own cows, the highest amount of households owning cows is found in the Kazbegi villages with 82 %. For the largest part, households own between one and five cows and / or calves. The mean value is calculated for those households that actually own cows. In Stepantsminda this value is somewhat distorted by the case that owns 107 cows and calves which also leads to a standard deviation that is considerably higher than for the rest of the sample. In the other groups the average amount of animals is between three and five. The mode is one for both Kazbegi groups and two for Bakuriani (for the Borjomi villages multiple modes exist), indicating that the most frequently mentioned amounts are below the total averages. Altogether there are only three households that own 30 cows or more. Looking at only those households that own cows and / or calves (n=178), 61 % of the households mentioned the consumption of cows or calves during the last twelve months. The mean consumption of these households was 3. 16 % of households owning cows also sold cows and 11 % bought cows or calves in the last year.

Table 6: Number of poultry

Number of poultry	Stepants-minda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	77	83.7	26	41.9	25	46.3	50	54.3	178	59.3
1-10	8	8.7	25	40.3	25	46.3	34	37.0	92	30.7
11-20	6	6.5	10	16.1	3	5.6	5	5.4	24	8.0
21-30	1	1.1	1	1.6	1	2	2	2.2	5	1.7
31-40							1	1.1	1	0.3
Total (valid)	**92**	**100**	**62**	**100**	**54**	**100**	**92**	**100**	**300**	**100**
Don't know (= missing)					1	-			1	-
Mean (SD)*	12.00	(0.57)	9.53	(6.04)	8.52	(4.49)	8.86	(7.05)	9.36	(6.10)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

Stepantsminda is the village with the smallest share of households owning poultry (16 %) whereas the largest share can be found in the Kazbegi villages (58 %). In the Borjomi region, the amount of households owning poultry is higher in the main village than in the smaller villages. Except for Stepantsminda where the amount of households owning poultry itself is comparatively low, 37 to 46 % of the households own between one and ten chicken with about 9 chickens on average in total. Of households that own chicken (n=122), 70 % mentioned the consumption of poultry with an average of 9 animals per household. Selling poultry over the past year was indicated by 3 % of households that own chicken and buying poultry was indicated by 9 %.

Table 7: Number of sheep

Number of sheep	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	81	88.0	55	90.2	55	100.0	86	93.5	277	92.3
1-5	3	3.3	2	3.3					5	1.7
6-10	2	2.2	2	3.3			3	3.3	7	2.3
11-15	1	1.1	1	1.6			1	1.1	3	1.0
20	2	2.2							2	0.7
30	1	1.1							1	0.3
50							1	1.1	1	0.3
100			1	1.6					1	0.3
150							1	1.1	1	0.3
500	1	1.1							1	0.3
700	1	1.1							1	0.3
Total (valid)	**92**	**100**	**61**	**100**	**55**	**100**	**92**	**100**	**300**	**100**
Don't know (= missing)			1	-					1	-
Mean (SD)*	119.6	(241.9)	23.5	(37.6)	-	-	40.2	(56.2)	73.8	(172.3)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

In Stepantsminda, Kazbegi and Borjomi villages around 90 % of the respondents do not own any sheep and in the sample from Bakuriani there are no households that own sheep at all. From the households that do own sheep, the amounts of sheep owned are very diverse, ranging up to 700 in Stepantsminda. The fact that the medians for Stepantsminda, Kazbegi villages and Borjomi villages (15, 10 and 12.5 respectively) are well below the averages shows that the mean is much affected by the extreme cases with larger amounts of sheep. 61 % of the 23 sheep owning households mentioned that they consumed sheep in the last twelve months, 22 % sold sheep and 9 % bought sheep. Average consumption was at 47 sheep, but median and mode are both at 10, indicating that the average is again strongly influenced by the extreme cases.

The other animals (pigs, horses, goats, rabbits and beehives) play a minor role. Save for few exceptions (pigs in Bakuriani, 14 %, horses in the Kazbegi villages, 16 % and rabbits in Bakuriani, 14 %), 10 % or less of the households own the respective animal in either region. Tables on their numbers can be found in Appendix A 2. Pigs are mostly owned in the Borjomi villages with 20 %, in the other groups there are 5 to 8 % and the mounts of pigs are between one and six. Of the 30 households that own pigs, 63 % consumed pig (with an average of 1.5) during in the last year. 90 % of those households sold pigs and 17 % bought pigs. Horses are mostly owned in the smaller villages, even more in the Kazbegi villages (16 %) than in the Borjomi villages (10 %). In total, one household mentioned selling and buying five horses during the last year. Goats cannot be found among the respondents from Bakuriani and in the other groups there are 5 % of households mentioning goats at the most. No one in the sample sold or bought goats during the last twelve months. More than two thirds of the households do not keep any dogs. Of those that do, most own one dog. The largest share of households owning dogs can be found in the Borjomi villages, followed by Bakuriani and Stepantsminda, the Kazbegi villages bringing up the rear. No household sold a dog, one households bought two dogs in the last year. Rabbits can hardly be found in the sample from the Kazbegi region. With 22 %, Bakuriani has more than double as many households with rabbits than the Borjomi villages. Amounts of rabbits are mostly between one and five. No rabbits were sold by those households that own rabbits, but 23 % of the 22 rabbit owners bought rabbits in the last year and 36 % mentioned the consumption of rabbit with a mean of 6. The Borjomi villages hold the largest share of households with beehives (8 %) while the main village of that region shows no beehives at all. In Kazbegi the share of respondents indicating beehives is slightly larger in the villages (3 %) than in the main village (2 %). No respondent mentioned selling or buying beehives in the last year.

The kinds of animals that are by far the ones mostly owned by the households are cows and poultry. In most cases the amounts of animals are small, with some few exceptions of households that keep larger amounts, maybe for commercial purposes. Furthermore it shows that there are some kinds of animals that cannot be found in the Bakuriani sample (sheep, goats and beehives) while in the other three groups there are at least some households mentioning the ownership of these. Taking a closer look at the households that own certain animals, it shows that consumption of poultry is most frequent (70 %), followed by pig (63 %), cows and calves (61 %), sheep (61 %) and rabbits (36 %). Selling is most common for pigs (90 %) while 22 % of owners sell sheep, 16 % sell cows and 3 % chicken. Fewest amounts of households mentioned buying animals (of owners: 23 % bought rabbits, 17 % pigs, 11 % cows, 9 % sheep and 9 % chicken).

Animal Products

After having reviewed the kinds of animals, their amounts and consumption, selling and buying of households that keep such kinds of animals, the following tables will turn to the animal products generated by the private households during the last twelve months. The products are presented according to the shares of households manufacturing the product, with the most frequently mentioned product first. Data is categorized in order to give an overview of the distribution. The categories are not always equally large due to fewer cases with higher amounts. Means and standard deviations are calculated based on those households that produce the mentioned product. As with livestock, respondents were also asked about the use of their products. Instead of displaying tables for these results as well, they are mentioned in the adjoining text paragraphs.

Table 8: Amount of produced milk in liters per year

Amount of manufactured milk in liters (last 12 months)	Stepants-minda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	47	54.0	12	21.4	31	58.5	42	48.8	132	46.8
1-100	3	3.4	6	10.7					9	3.2
101-200	2	2.3	2	3.6	1	1.9	2	2.3	7	2.5
201-300	5	5.7	5	8.9			1	1.2	11	3.9
301-400	1	1.1	5	8.9			2	2.3	8	2.8
401-500	2	2.3	10	17.9	2	3.8	5	5.8	19	6.7
501-1000	9	10.3	9	16.1	6	11.3	11	12.8	35	12.4
1001-2000	10	11.5	4	7.1	1	1.9	9	10.5	24	8.5
2001-3000	4	4.6	2	3.6	10	18.9	6	7.0	22	7.8
4001-5000	2	2.3	1	1.8	2	3.8	1	1.2	6	2.1
5001-10000	2	2.3					6	7.0	8	2.8
12000							1	1.2	1	0.4
Total (valid)	**87**	**100**	**56**	**100**	**53**	**100**	**86**	**100**	**282**	**100**
Do not know (= missing)	5		6		2		6		19	
Mean (SD)*	1525	(1951)	1074	(1111)	1820	(1092)	2887	(2535)	1835	(1975)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

For the whole sample, there are 56 % of households that manufacture milk, with larger shares in the Kazbegi and Borjomi villages (81 % and 54 % respectively) than in Stepantsminda and Bakuriani (49 % and 44 % respectively). The numbers of households producing milk roughly correspond to the amounts of households owning cows and / or calves in the four groups (see Table 5). It furthermore shows that data on milk production from the Borjomi villages is most diverse with the highest standard deviation and at the same time with the highest average produced amount of almost 2900 liters during the last year. Although milk production is most frequent in the Kazbegi villages, the average amount of production was lowest in this group. 11 % of the households that produce milk

were not able to tell how much. Of all the 169 households that produce milk, 76 % said that they consume (at least part of) the milk themselves, 4 % said that they also sell milk.

Table 9: Amount of produced cheese in kg per year

Amount of manufactured cheese in kg (last 12 months)	Stepants-minda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	49	55.7	13	24.5	31	58.5	43	49.4	136	48.4
1-50	9	10.2	17	32.1	1	1.9	3	3.4	30	10.7
51-100	13	14.8	8	15.1	11	20.8	11	12.6	43	15.3
101-200	8	9.1	8	15.1	2	3.8	9	10.3	27	9.6
201-300	4	4.5	4	7.5	5	9.4	9	10.3	22	7.8
301-400	2	2.3					5	5.7	7	2.5
401-500			1	1.9	1	1.9	1	1.1	3	1.1
501-600							4	4.6	4	1.4
601-700										
701-800	1	1.1			1	1.9	1	1.1	3	1.1
801-900										
901-1000					1	1.9	1	1.1	2	0.7
1200			1	1.9					1	0.4
1500	1	1.1							1	0.4
1600	1	1.1	1	1.9					2	0.7
Total (valid)	**88**	**100**	**53**	**100**	**53**	**100**	**87**	**100**	**281**	**100**
Do not know (= missing)	4		9		2		5		20	
Mean (SD)*	218	(344)	176	(307)	234	(243)	262	(208)	222	(282)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

Much like the production of milk, the highest share of households manufacturing the dairy product cheese comes from the Kazbegi villages (79 %) and again the average amount of production is lowest for this group. The second highest share of households producing cheese is found in the Borjomi villages (53 %), leaving Stepantsminda (47 %) and Bakuriani (44 %) at ranks three and four, as was the case for milk as well. From 165 households in total that produce cheese, 12 % do not know the amount of their production. 78 % consume at least some of their own cheese and 14 % also indicate selling part of their produce.

Table 10: Amount of produced eggs per year

Number of manufactured eggs (last 12 months)	Stepants-minda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	78	88.6	35	62.5	32	74.4	59	71.1	204	75.6
1-250	4	4.5	11	19.6	7	16.3	10	12.0	32	11.9
251-500	4	4.5	7	12.5	1	2.3	3	3.6	15	5.6
501-750			2	3.6	1	2.3	5	6.0	8	3.0
751-1000	2	2.3	1	1.8	1	2.3	5	6.0	9	3.3
1200							1	1.2	1	0.4
1800					1	2.3			1	0.4
Total (valid)	**88**	**100**	**56**	**100**	**43**	**100**	**83**	**100**	**270**	**100**
Do not know (= missing)	4		6		12		9		31	
Mean (SD)*	407	(257)	320	(243)	415	(536)	461	(359)	400	(347)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

Following milk and cheese, eggs are the third most produced animal product. 32 % of the whole sample indicated having eggs. Eggs are most often produced by households in the Kazbegi villages (44 %), followed by Bakuriani (42 %), Borjomi villages (36 %) and least frequently in Stepantsminda (15 %). This data is in accordance with the amounts of households that own poultry (see Table 6). Of the 97 egg-producing households, 32 % did not know how many eggs they had in the last year. One household indicated selling eggs.

Table 11: Amount of produced butter in kg per year

Amount of manufactured butter in kg (last 12 months)	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	62	71.3	42	72.4	45	83.3	65	76.5	214	75.4
1-25	15	17.2	8	13.8	7	13.0	13	15.3	43	15.1
26-50	7	8.0	6	10.3	1	1.9	4	4.7	18	6.3
51-75					1	1.9	1	1.2	2	0.7
76-100	2	2.3	2	3.4			2	2.4	6	2.1
200	1	1.1							1	0.4
Total (valid)	**87**	**100**	**58**	**100**	**54**	**100**	**85**	**100**	**284**	**100**
Do not know (= missing)	5		4		1		7		17	
Mean (SD)*	36	(42)	32	(30)	21	(19)	28	(25)	31	(32)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

A little less than one third of the sample produced butter in the last twelve months (29 %). The lowest number of households producing butter can be found in Bakuriani (18 %), which is also the

group with the lowest number of households owning cows and / or calves (see Table 5). One fifth of the butter producing households do not know the amount they produce and one person mentioned selling butter.

Table 12: Amount of produced meat in kg per year

Amount of manufactured meat in kg (last 12 months)	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	75	88.2	49	83.1	42	80.8	79	88.8	245	86.0
1-50	2	2.4	4	6.8	3	5.8	4	4.5	13	4.6
51-100	3	3.5	5	8.5	3	5.8	5	5.6	16	5.6
111	1	1.2							1	0.4
150					3	5.8			3	1.1
160	1	1.2							1	0.4
170			1	1.7	1	1.9			2	0.7
200	1	1.2							1	0.4
300	1	1.2					1	1.1	2	0.7
1000	1	1.2							1	0.4
Total (valid)	**85**	**100**	**59**	**100**	**52**	**100**	**89**	**100**	**285**	**100**
Do not know (= missing)	7		3		3		3		16	
Mean (SD)*	208	(290)	73	(48)	96	(68)	91	(78)	117	(159)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

Roughly one fifth of all households produces meat (19 %), 29 % of which do not know the amount of produced meat. The average amount of meat is by far the largest in Stepantsminda with 208 kg per household, but also the highest standard deviation due to an extreme value that influences both mean and standard deviation. In this case the median shows that the distribution in Stepantsminda is not as different from that in Bakuriani (with values of 95.5 and 100 respectively) as the mean might lead to believe. The median in the smaller villages is somewhat lower with a value of 70. Three respondents mentioned selling meat.

Some households also produce sour cream, wool and honey. Tables on these animal products can be found in Appendix A 3. Sour cream, another dairy product, is manufactured by 14 % of the households, most frequently in Stepantsminda (22 %) and least frequently in the Borjomi villages (8 %). One third of the producing households do not know the amount they produce and none sell sour cream. As suggested by the number of sheep (see Table 7), there is no production of wool in Bakuriani. 13 % of wool producing households do not know the amount they produce and the same share of households indicated that they sell wool. 3 % of the total sample produce honey. The share of households producing honey is larger in the Borjomi villages with 5 % but there are no households with honey in Bakuriani. Of the households that produce honey, 40 % sell at least part of their production. In addition to the products described above, households were also asked if they produce

animal skins or fur. Doing so was indicated by one household in Stepantsminda who produces an unknown amount of cow skins and one household in the Kazbegi villages who produces an unknown amount of sheep skins. Four households mentioned the production of ერბო, which is lard as opposed to butter, and two respondents specifically indicated მაწონი, which is a kind of sour cream or sour milk, but neither of the six households sell this produce.

The three most common products are milk (n=169), cheese (n=165) and eggs (n=97). Whereas respondents indicated the number of animals in most cases, it was more difficult for them to name the amounts of their production. Selling of animal products is less common than selling of animals. Of the producers of the respective product, 40 % sell honey, 14 % sell cheese and 13 % sell wool. All other products are sold by less than or equal to 5 % of producers. Households were also asked how much of their animal products they consume themselves, but this question was not answered by all households. One reason for this could derive from the fact that the private households often barter excess production instead of consuming or selling it. The given categories in the questionnaire were not suitable for this kind of answer since this knowledge was only just gained during the survey. This might explain why the amounts of consumption do not correspond well with the mentioned amounts of produce. Generally, there were more cases that did not know amounts for animal products than for the number of animals themselves. Since only few households indicated selling production, it is possible that households that only use animal products for their private consumption do not keep track of the amounts they consume. Altogether, the correspondence between mentioned animals and the associated products corroborates the data.

5.3.3 Cultivation of Land and Land Use

The term land use refers to human activities carried out to change or maintain a land cover type. This also involves inputs of people and their actions within their environment.[296] The following tables and explanations inform on the land plots owned by the private households of the sample, which plants they cultivate and the influences of the land reform on their landownership.

Land Reform

The land reform at the beginning of the 1990s distributed part of the land that was formerly state-owned among private households (see Chapter 2.1.2). 12 % of the sampled households answered that they did not own any land before the land reform (of n=274 valid cases). Among the households that owned land before the land reform, the median amount of owned land was 0.1 ha. Today, households owning no land at all is at 2 % (n=291) and the median among the households that own land is 0.15 ha. 64 % of the households mentioned that they did not receive land through the reform (n=279). Among the 36 % of the households that benefitted from the land reform, the median of received land is 0.24 ha.

Land Parcels

The large majority of cases use between one and three land parcels. There are eight households that did not indicate any land parcels, aside from these most households mentioned two parcels (47 %),

[296] Cf.: Di Gregorio & Jansen 1998, p. 3.

followed by three parcels (34 %) and one parcel (19 %). Summing all mentioned land parcels, there are 542 for the whole sample (177 in Stepantsminda, 121 in Kazbegi villages, 96 in Bakuriani and 148 in Borjomi villages). In order to analyze the characteristics of these 542 land parcels they will be treated as cases in the following paragraphs.

Table 13: Kinds of land parcels by size in m²

		Kind of land parcel				
	Size of land parcel in m²	**Vegetable garden**	**Arable land (incl. fallow land)**	**Hay meadow**	**Pasture (land for grazing)**	**Total**
Stepantsminda (n=177, missing=3)	1-250	18%	11%	5%		**34%**
	251-1000	18%	9%	8%		**36%**
	1001-2500	7%	3%	10%		**21%**
	2501-5000	1%	1%	4%		**5%**
	5001-highest	2%		1%	1%	**4%**
	Total	**46%**	**24%**	**29%**	**1%**	**100%**
	Mean	1599	559	1781		
	SD	5963	811	2264		
Kazbegi villages (n=121, missing=1)	1-250	16%	16%	5%		**37%**
	251-1000	16%	19%	9%		**44%**
	1001-2500	1%	3%	8%		**12%**
	2501-5000		1%	6%		**7%**
	5001-highest			1%		**1%**
	Total	**33%**	**38%**	**29%**		**100%**
	Mean	378	556	1743		
	SD	392	618	1584		
Bakuriani (n=96, missing=3)	1-250	6%	2%	1%		**10%**
	251-1000	25%	17%	10%		**52%**
	1001-2500	13%	3%	2%		**18%**
	2501-5000	2%	1%	2%		**5%**
	5001-highest		2%	13%		**15%**
	Total	**46%**	**26%**	**28%**		**100%**
	Mean	898	1446	5615		
	SD	689	1881	9543		
Borjomi villages (n=148, missing=4)	1-250	10%	10%	1%		**21%**
	251-1000	17%	16%	2%		**35%**
	1001-2500	8%	9%	7%		**24%**
	2501-5000	3%	1%	1%		**6%**
	5001-highest	3%	1%	10%		**13%**
	Total	**42%**	**37%**	**21%**		**100%**
	Mean	1588	1486	8968		
	SD	2980	4098	12000		

Source: Own data.

Table 13 reveals that except for the group of the Kazbegi villages, the most common kind of land parcel is a vegetable garden which can often be found right next to the house. In the smaller Kazbegi

villages, arable land is the most common kind of land parcels. Almost one third of the land parcels in Stepantsminda, Kazbegi villages and Bakuriani are hay meadows while only one fifth of the parcels in the Borjomi villages belongs to this category. Only in Stepantsminda households classified parcels as pasture in 1 % of the cases. The average size of vegetable gardens is almost equally large in Stepantsminda and Borjomi villages, large standard deviations indicate that sizes of these plots differ considerably. The smallest averages size of this land type is found in Kazbegi villages. Arable land is on average much smaller in the two groups from the Kazbegi region than in the two groups from the Bakuriani region, the same is true in the case of hay meadows. Whereas more than 90 % of the land plots in both Kazbegi groups are in the first three categories, ranging up to 2500 m², around 20 % of the land plots in both Bakuriani groups are larger than this.

95 % of all used land plots are owned by a family member of the household. Between 1-2 % of the plots in each group are communal ownership with use rights for the inhabitants. Leasing only occurs in the two Bakuriani groups in 1 % of the cases, but not in Kazbegi.

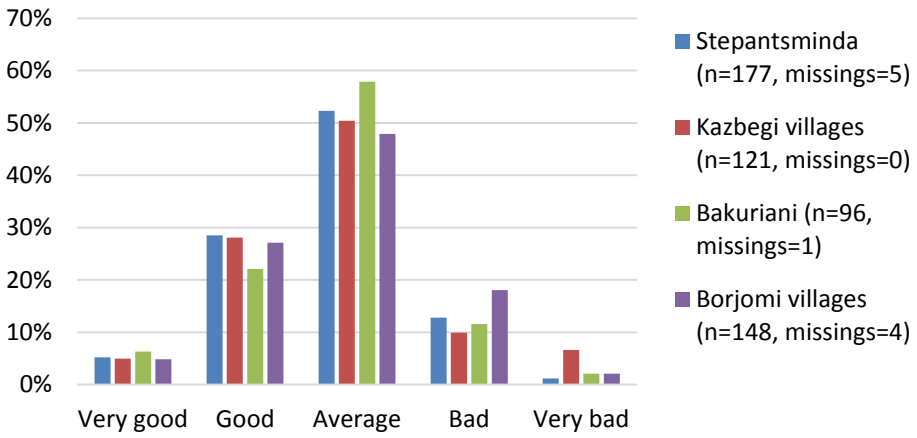


Figure 14: Subjective assessment of land quality for land parcels
Source: Own data.

According to the respondents, the quality of most parcels is good or average (around 75 % of the parcels). This subjective assessment of land quality does not differ much across groups.

Cultivation of Crops

Table 13 shows that most land parcels that are used by the households are either a vegetable garden or arable land. The following figure displays which crops and fruits are cultivated by the households of the sample.

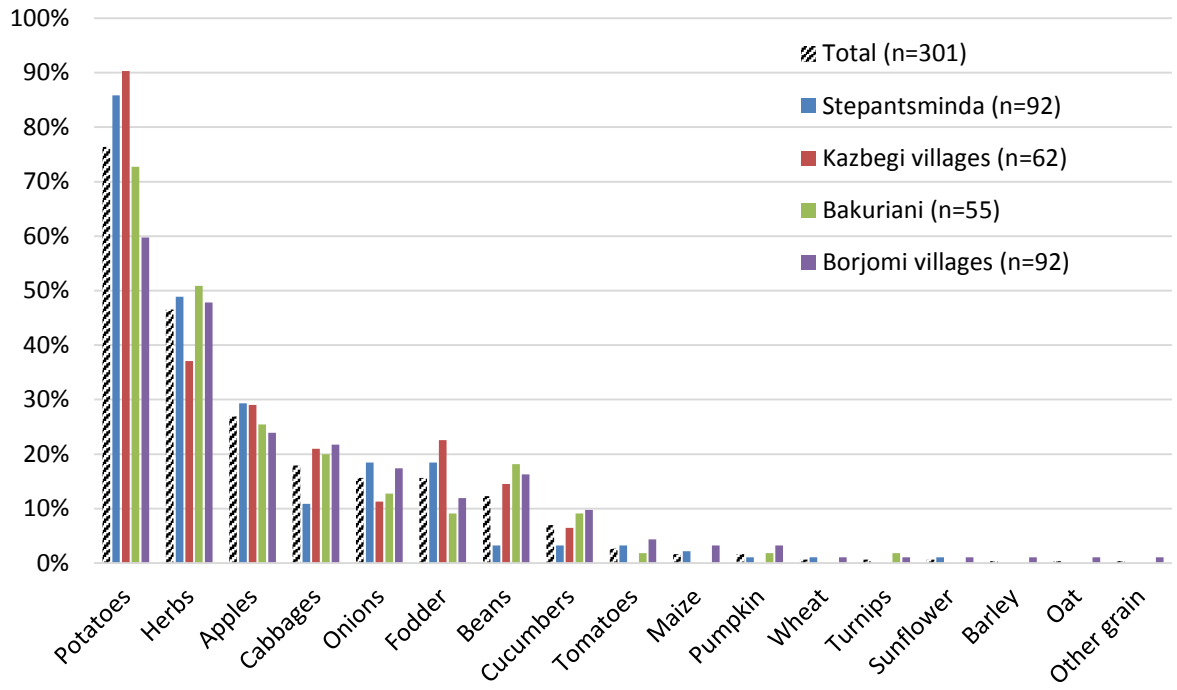


Figure 15: Percentages of households cultivating certain crops
Source: Own data.

By far the most frequently planted crop is potato. 76 % of the total sample mentioned cultivating this crop, in the case of the summed Kazbegi villages, 90 % of the households cultivate potatoes. Herbs are the second most frequent crop for all households with almost half of the respondents mentioning the cultivation of herbs, followed by apples which are cultivated by 27 %. Between 10 and 20 % of all households mentioned that they grow cabbages, onions, fodder and / or beans. Fodder was mentioned more often in the two groups from the Kazbegi region than by the groups from the Borjomi region. Less than 10 % cultivate cucumbers and less than 5 % mentioned tomatoes, maize, pumpkin, wheat, turnips, sunflower, barley oat and other grain. While the share of households mentioning apples is not very diverse across groups, beans are hardly cultivated in Stepantsminda and six times more often in Bakuriani. The Borjomi villages feature some crops that were not mentioned in any other group: barley, oat and other grain only occur in this group. A table showing mean, median and standard deviations for the areas and yields of all crops can be found in Appendix A 4. Since distributions are rather skewed in some cases, the median is given in addition to the mean.

The majority of respondents mentioned that their households cultivate potatoes. The following table provides a closer look on production of potatoes by cross-tabulating yield of production during the last twelve months with the area of production.

Table 14: Yield of potatoes by area of potatoes

Yield of potatoes in kg (last 12 months)		Area of cultivated potatoes in m²								
		1-250	251-500	501-750	751-1000	1251-1500	1501-1750	1751-2000	2001-highest	Total
Stepantsminda (n=71 of 79)	0	2.8%								2.8%
	1-50	4.2%								4.2%
	51-100	2.8%	4.2%						1.4%	8.5%
	101-150	7.0%	2.8%						1.4%	11.3%
	151-200	2.8%	4.2%		2.8%					9.9%
	201-250	1.4%	1.4%	1.4%						4.2%
	251-300	7.0%	4.2%						2.8%	14.1%
	301-highest	14.1%	14.1%	8.5%	2.8%				5.6%	45.1%
	Total	42.3%	31.0%	9.9%	5.6%				11.3%	100.0%
Kazbegi villages (n=53 of 55)	1-50	1.9%								1.9%
	51-100	11.3%	3.8%							15.1%
	101-150	9.4%	5.7%		1.9%					17.0%
	151-200	5.7%				1.9%				7.5%
	201-250	3.8%	3.8%							7.5%
	251-300	11.3%	3.8%	1.9%					3.8%	20.8%
	301-highest	1.9%	9.4%	1.9%	13.2%	1.9%			1.9%	30.2%
	Total	45.3%	26.4%	3.8%	15.1%	3.8%			5.7%	100.0%
Bakuriani (n=34 of 39)	0	2.9%								2.9%
	1-50	5.9%			2.9%					8.8%
	51-100		2.9%	2.9%						5.9%
	101-150		5.9%		2.9%					8.8%
	151-200	5.9%	8.8%	2.9%	5.9%			2.9%		26.5%
	201-250			2.9%	2.9%					5.9%
	251-300		5.9%	5.9%		2.9%				14.7%
	301-highest		8.8%	8.8%	2.9%	2.9%			2.9%	26.5%
	Total	14.7%	32.4%	23.5%	17.6%	5.9%		2.9%	2.9%	100.0%
Borjomi villages (n=46 of 55)	0	2.2%								2.2%
	1-50	2.2%	2.2%		2.2%					6.5%
	51-100	8.7%	2.2%							10.9%
	101-150	8.7%			2.2%					10.9%
	151-200	15.2%	2.2%	2.2%	2.2%					21.7%
	251-300		4.3%							4.3%
	301-highest	6.5%	13.0%	6.5%	8.7%	2.2%	2.2%	2.2%	2.2%	43.5%
	Total	43.5%	23.9%	8.7%	15.2%	2.2%	2.2%	2.2%	2.2%	100.0%

Source: Own data.

In more than half of the cases, potatoes are grown on areas between 1-500 m². The median size is 300 m² in all groups except for Bakuriani, which shows a median size of 500 m². The households in

Stepantsminda show the highest yields. Second in yields are the Kazbegi villages. The cultivation of potatoes seems to be more important in the Kazbegi region than in the Borjomi region since the share of households that cultivate potatoes is larger in both groups from that region and also yields and areas of cultivation are generally larger than in the Borjomi region. The standard deviations (not depicted in the table) of the sizes of cultivated potatoes are much larger for Stepantsminda and Kazbegi villages (500 000 m^2 and 410 000 m^2 respectively) than for Bakuriani and Borjomi villages (574 m^2 and 512 m^2 respectively). This shows that the two Kazbegi groups are much more heterogeneous in their answers than the two groups from the Borjomi region. Dividing yields by area shows the productivity in the different groups. For the whole sample, average productivity is 115 dt/ha. This is a little lower than the average yield of potatoes for whole Georgia which was at 136 dt/ha in 2011.[297] Considering the four groups of villages, average productivity is largest in Stepantsminda with an average of 157 dt/ha and lowest in Bakuriani (53 dt/ha). The remaining two groups show averages around 107 dt/ha. In Germany, the productivity in dt/ha was 458 in the year of the survey.[298] In both Stepantsminda and the Kazbegi villages 3 households answered that they sell potatoes, 2 households in Borjomi villages sell potatoes and none in Bakuriani.

Following potatoes, fodder shows the second largest average size of cultivated area (3219 m^2) and the largest average yield (2585 kg) during the last twelve months. Table 15 shows a cross table of yield and area for fodder.

[297] Cf.: National Statistics Office of Georgia (GeoStat) 2013a, p. 29.
[298] Cf.: Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz 2013, p. 475.

Table 15: Yield of fodder by area of fodder

Yield of fodder in kg (last 12 months)		Area of cultivated fodder in m²							
		1-250	251-500	501-750	751-1000	1001-1250	1501-1750	2001-highest	Total
Stepantsminda (n=7 of 17)	**151-300**	14.3%	14.3%	14.3%				14.3%	57.1%
	900	14.3%							14.3%
	1000		14.3%						14.3%
	1500							14.3%	14.3%
	Total	28.6%	28.6%	14.3%				28.6%	100.0%
Kazbegi villages (n=7 of 14)	**1-150**	42.9%							42.9%
	151-300		14.3%						14.3%
	301-450					14.3%			14.3%
	451-600				14.3%				14.3%
	3000							14.3%	14.3%
	Total	42.9%	14.3%		14.3%	14.3%		14.3%	100.0%
Bakuriani (n=2 of 5)	**8000**						50.0%		50.0%
	15000							50.0%	50.0%
	Total						50.0%	50.0%	100.0%
Borjomi villages (n=2 of 11)	**1100**				50.0%				50.0%
	1500							50.0%	50.0%
	Total				50.0%			50.0%	100.0%

Source: Own data.

The cases that can be analyzed regarding the area and yield of fodder is very small. In Bakuriani and Borjomi villages each, 2 households gave the necessary information and in Stepantsminda and Kazbegi villages each, 7 households answered both questions. For both Kazbegi groups these cases gave very different answers with either small areas and small yields (1-250 m² and 1-300 kg) or large areas and large yields (2001-highest m² and 1500-3000 kg). In Bakuriani the mentioned yields are exceptionally large, while those in the Borjomi villages are comparable with those from the Kazbegi groups. Productivity of the cultivation of fodder is highest in Bakuriani (265 dt/ha; not depicted in the table), followed by Stepantsminda (159 dt/ha). Generally, the two village groups show smaller productivity with 76 dt/ha in Borjomi villages and 49 dt/ha in Kazbegi villages. The only household that mentioned selling fodder lives in Stepantsminda.

Aside from potatoes and fodder, the selling of the respective product was only mentioned for apples and onions. Apples are sold by only 2 households, both of which come from Stepantsminda, and 1 household in the Borjomi villages answered that they sell onions. Tables on the yields of herbs and apples can be found in Appendix A 5.

During soviet times when gas was cheap, the use of greenhouses was common in the Kazbegi region. Today there are four households in the sample that own a greenhouse, but only one household that still uses it. In the Kazbegi villages, one household still uses a greenhouse and a second households

owns one without using it. In Bakuriani there is one household that owns a greenhouse without using it.

5.3.4 Importance of Subsistence Farming

As it was addressed in Chapter 2.1.3, agricultural activities were and still are important for the population of Georgia, particularly in rural areas. The data so far has already shown that production is mostly at a low level and few respondents indicated that their households sell part or all of their production. The following explications will have a look at the degree of utilization of agricultural products for subsistence. The cases that sell at least part of their production are then analyzed regarding their customers and places of selling. A bar chart (Figure 16) will show whether households that are involved in agricultural activities diversify their activities by being involved in tourism as well.

Respondents were asked to rate the share of their agricultural production used for selling vs. used for their own consumption.

Table 16: Use of production

		Sold production			Consumed production		
	Amount of production in %	N	%	Valid %	N	%	Valid %
Stepantsminda	1-20	1	1.1	14.3	2	2.2	3.6
	21-40	1	1.1	14.3			
	41-60	3	3.3	42.9	3	3.3	5.5
	61-80	1	1.1	14.3	1	1.1	1.8
	81-100	1	1.1	14.3	49	53.8	89.1
	Total Valid	**7**	**7.7**	**100.0**	**55**	**60.4**	**100.0**
	No production for this purpose	84	92.3		36	39.6	
	Total	**91**	**100.0**		**91**	**100.0**	
Kazbegi villages	1-20	3	5.1	60.0			
	21-40	1	1.7	20.0			
	41-60	1	1.7	20.0	1	1.7	2.5
	61-80				2	3.4	5.0
	81-100				37	62.7	92.5
	Total Valid	**5**	**8.5**	**100.0**	**40**	**67.8**	**100.0**
	No production for this purpose	54	91.5		19	32.2	
	Total	**59**	**100.0**		**59**	**100.0**	
Bakuriani	1-20	1	1.9	20.0			
	21-40	3	5.6	60.0			
	41-60	1	1.9	20.0	1	1.9	2.4
	61-80				3	5.6	7.1
	81-100				38	70.4	90.5
	Total Valid	**5**	**9.3**	**100.0**	**42**	**77.8**	**100.0**
	No production for this purpose	49	90.7		12	22.2	
	Total	**54**	**100.0**		**54**	**100.0**	
Borjomi villages	1-20	4	4.3	33.3			
	21-40	2	2.2	16.7	2	2.2	3.0
	41-60	6	6.5	50.0	5	5.4	7.5
	61-80				3	3.3	4.5
	81-100				57	62.0	85.1
	Total Valid	**12**	**13.0**	**100.0**	**67**	**72.8**	**100.0**
	No production for this purpose	80	87.0		25	27.2	
	Total	**92**	**100.0**		**92**	**100.0**	

Note: 2 cases mentioned using production for other purposes than selling or own consumption. Source: Own data.

There are considerably more households that use production for their own consumption (60-78 %) than those who sell at least part of their production (8-13 %). Private consumption of agricultural products is most common in Bakuriani, whereas the largest share of households that sell can be found in the Borjomi villages. For both regions, the share of households that sell agricultural products is larger in the groups with the aggregated smaller villages than in the main villages. Agricultural production for subsistence purposes is more prominent in the Borjomi region than in the Kazbegi region. Within the regions, own consumption of products is more common in the main village of Borjomi but in Kazbegi it is more common for the summed villages. The distributions of the amounts

of production used for selling or own consumption show that selling in most cases concerns smaller amounts while own consumption concerns larger shares. This shows that even if households sell part of their production, they also retain some (or in most cases most) of the production for their own usage.

Respondents were asked to indicate their places of selling and the kinds of customers that buy their products. Altogether, 34 cases gave information on both of these questions (2 cases only provided an answer for one of the questions). Combining this data gives an indication of the most frequently used places of selling and the most common customers, as can be seen in Table 17.

Table 17: Places of selling products by customers

	Customers																	
Places of selling	**Family and friends**		**Neighbors and villagers**		**People from surrounding villages**		**Tourists**		**Traders**		**Processing industry**		**Other**		**Total**	
Stepantsminda (n=89)																
On farm	11%	(1)	11%	(1)	22%	(2)	11%	(1)	11%	(1)			11%	(1)	33%	(3)
In streets			11%	(1)											11%	(1)
Store (own village)									11%	(1)	11%	(1)			11%	(1)
Bigger cities	11%	(1)	11%	(1)	11%	(1)	11%	(1)	11%	(1)	11%	(1)	11%	(1)	33%	(3)
Other							11%	(1)	11%	(1)					22%	(2)
Total	11%	(1)	22%	(2)	22%	(2)	22%	(2)	44%	(4)	22%	(2)	22%	(2)	100%	(9)
Kazbegi villages (n=62)																
On farm									13%	(1)					13%	(1)
In streets			13%	(1)			13%	(1)	38%	(3)					50%	(4)
Farmer's market (own village)									13%	(1)					13%	(1)
Store (other village)									13%	(1)					13%	(1)
Farmer's market (other village)									13%	(1)					13%	(1)
Bigger cities											13%	(1)			13%	(1)
Total			13%	(1)			13%	(1)	75%	(6)	13%	(1)			100%	(8)
Bakuriani (n=55)																
On farm							33%	(2)	17%	(1)					33%	(2)
In streets			17%	(1)			67%	(4)	17%	(1)					67%	(4)
Other													17%	(1)	17%	(1)
Total			17%	(1)			83%	(5)	17%	(1)			17%	(1)	100%	(6)
Borjomi villages (n=91)																
On farm			9%	(1)	18%	(2)	9%	(1)	18%	(2)					36%	(4)
In streets			18%	(2)	9%	(1)	9%	(1)	18%	(2)					27%	(3)
Store (own village)					9%	(1)			9%	(1)					9%	(1)
Farmer's market (own village)									9%	(1)					9%	(1)
Store (other village)			9%	(1)			9%	(1)	18%	(2)					18%	(2)
Bigger cities	9%	(1)	9%	(1)					27%	(3)					36%	(4)
Total	9%	(1)	36%	(4)	27%	(3)	18%	(2)	64%	(7)					100%	(11)

Note: Multiple answers were possible on both questions. Percentages and totals are based on respondents. 4 cases were excluded from the analysis due to inconsistencies. Source: Own data.

The most frequently mentioned places of selling are directly on the farm, in the streets and in bigger cities. At least one third of the 34 cases mentioned these places. The most common customers are traders, tourists, neighbors and people from surrounding villages. Tourists are most prominent in Bakuriani while traders are most common in the other three groups. Neighbors and people from surrounding villages are comparatively more important in the Borjomi villages than in the other groups. For Stepantsminda and the Kazbegi villages there is one combination that is more common in each case: Households in Stepantsminda mostly sell on the farm to people from surrounding villages and households in the Kazbegi villages mostly sell in the streets to traders. For the Borjomi groups the combinations are more diverse. Inhabitants of Bakuriani mostly sell to tourists, either on the farm in the streets. Many households from the Borjomi villages sell to traders, mostly in bigger cities but also stores in other villages or in the streets of their own village or directly on the farm. Other households from the Borjomi villages sell to neighbors and people from other villages, either in the streets or on the farm respectively. Considering that there are 34 households that provided information on customers and places of selling, 10 households indicating that they sell to tourists is almost one third, giving relative importance to tourists as customers.

The next figure combines information from the use of agricultural production with tourism activities. Households are analyzed with regard to whether they produce agricultural goods and whether they offer touristic services. It is generally possible that activities in the tourism sector substitute agricultural activities, but they can also have a supplementary character and lead to diversification of activities of the household.[299]

Figure 16: Involvement of households in agricultural production and tourism
Source: Own data.

The share of households producing agricultural goods without any offers in the tourism sector is highest in the two groups that sum the smaller villages. Touristic activities without agricultural production, on the other hand, is highest in the main villages Stepantsminda and Bakuriani (although

[299] Since the design of the study is cross-sectional and not a panel study, it is unfortunately not possible to analyze the shift in activities over time.

closely followed by the Borjomi villages) and diversification of activities is also largest in the two main villages. Comparing the fields of activities with one another within the groups, diversification receives the largest share within the main villages just as agriculture without tourism receives the greatest importance within the smaller villages. The Kazbegi villages show the largest portion of households that are not active in either agricultural production or tourism.

Adding the shares of households that are active in tourism regardless of whether they carry out agricultural activities as well, it is remarkable to see that more than half of the households in the main villages and more than one quarter of the households in the other villages mention some kind of touristic activity. The following chapter takes a closer look at the touristic offers made by the households of the sample. This information is furthermore important for the analysis of behavioral intentions since they will focus on an enhancement of such activities.

5.3.5 Tourism Activities of Private Households

Since tourism is important for both research regions, this business branch was included in the questionnaire in more detail. In the Module on Tourism Supply, respondents were asked whether they are involved in offering different kinds of services for tourists. The question Q 65 provided a list of possible services, including accommodation, lending of equipment or gastronomy, and respondents were asked to indicate which of these options apply in their case. In order to get an idea of how diversified households are in their offers for tourists, a sum score was created. This variable adds up all the offers indicated by the households and shows how many options the respondents ticked.

Table 18: Number of services offered and percentage of households indicating these offers

Number of services	Kazbegi region (n=154)	Bakuriani region (n=147)	Stepants-minda (n=92)	Kazbegi villages (n=62)	Bakuriani (n=55)	Borjomi villages (n=92)	Total (n=301)
0	58%	59%	48%	73%	35%	74%	58%
1	28%	31%	28%	27%	45%	22%	29%
2	11%	8%	18%		15%	4%	10%
3	3%	1%	4%		4%		2%
4	1%		1%				0%
5		1%			2%		0%

Source: Own data.

At first glance it seems as if the two regions do not differ much since approximately the same share of households is involved in tourism in both Kazbegi and Bakuriani (around 40 %) and also diversification is similar. Pearson's χ^2 test proves that there is no significant difference between the shares of people involved in tourism between the two regions, thereby rejecting Hypothesis 19. Taking a more differentiated look by defining four groups, it shows that in the village of Bakuriani more households are involved in offering services to tourists than in Stepantsminda. Conducting a χ^2 test for four groups (in which the main villages each form one group and the smaller villages per region are summed in two additional groups) shows that there are in fact significant differences. Post hoc comparisons between all these groups were calculated to compare the shares of households

involved in tourism and to detect the location of significant differences. There are no significant differences between the two main villages, neither between Kazbegi villages and Borjomi villages (a little less than one third of the households that were sampled in the smaller villages of both regions indicate some kind of tourism offer). However, the share of households involved in touristic activities differs significantly when comparing either one of the main villages with either one of the two groups with the summed smaller villages (Hypothesis 24). All post hoc comparisons confirm the proposed directionality of Hypothesis 24 that postulates a larger share of households involved in tourism for the main villages than for the summed smaller villages. Table 19 provides a summary of which groups differ significantly. It furthermore shows the results of post hoc comparisons for the numbers of touristic offers. In these tests, the cases that offer any kind of touristic service were analyzed with regard to their amounts of offered services (Hypothesis 21). As in the case of the shares of involvement, there are significant differences when comparing Stepantsminda with the two groups of the summed smaller villages and there are no significant differences when comparing the two main villages, neither when comparing the two groups of the smaller villages. Bakuriani and Kazbegi villages differ significantly. Other than in the case of involvement, there is no significant difference between the numbers of offers when comparing Bakuriani and Borjomi villages, which are both from the Borjomi region. The mean values of the four groups show that diversification of offers is larger in the main villages than in the smaller villages. Hypothesis 21 has to be rejected since there is neither a significant difference between Stepantsminda and Bakuriani, nor between the overall values of the two regions. It should be noted, though, that in smaller villages the diversification is significantly smaller than in the main villages with the exception of Bakuriani and the smaller villages of Borjomi.

Table 19: Summary of t-tests comparing the shares of households involved in touristic activities for four groups and difference tests of the numbers of touristic offers

Hypothesis 24 / **Hypothesis 21**		**Differences in the shares of involved households**			
		Stepantsminda (n=92)	Kazbegi villages (n=62)	Bakuriani (n=55)	Borjomi villages (n=92)
Differences in the numbers of offers	Stepantsminda (n=48)		significant	no difference	significant
	Kazbegi villages (n=17)	significant		significant	no difference
	Bakuriani (n=36)	no difference	significant		<u>significant</u>
	Borjomi villages (n=24)	significant	no difference	<u>no difference</u>	

Source: Own data.

With 40 years at most and an average of 13 years, households in Borjomi have been involved in tourism for a longer period of time than households in Kazbegi (16 years at most, 3.5 on average). The mean difference of 9.5 years between the mean values of years of involvement between both regions is statistically significant (Hypothesis 20).

Table 20: Number of households offering no vs. any kind of touristic service

Village		N	%
Stepantsminda + Gergeti (n=92)	no offers in tourism sector	44	47.8
	making offers in tourism sector	48	52.2
Sno (n=24)	no offers in tourism sector	18	75.0
	making offers in tourism sector	6	25.0
Kanobi (n=10)	no offers in tourism sector	9	100.0
	making offers in tourism sector	0	0.0
Juta (n=9)	no offers in tourism sector	2	22.2
	making offers in tourism sector	7	77.8
Zemo + Kvemo Mleta (n=20)	no offers in tourism sector	16	80.0
	making offers in tourism sector	4	20.0
Bakuriani (n=55)	no offers in tourism sector	19	34.5
	making offers in tourism sector	36	65.5
Tsikhisjvari (n=24)	no offers in tourism sector	22	91.7
	making offers in tourism sector	2	8.3
Bakurianis Andeziti (n=18)	no offers in tourism sector	14	77.8
	making offers in tourism sector	4	22.2
Didi Mitarbi (n=10)	no offers in tourism sector	10	100.0
	making offers in tourism sector	0	0.0
Tsagveri (n=40)	no offers in tourism sector	22	55.0
	making offers in tourism sector	18	45.0

Source: Own data.

The numbers on the separate villages in Table 20 show that except for Juta (Kazbegi region) and Tsagveri (Bakuriani region), the share of households making offers in the tourism sector is below the percentage of people involved when only looking at the regions. In the other villages, households are less involved in the tourism sector than in the main villages Stepantsminda and Bakuriani. The only villages that do not feature any sampled households involved in tourism are Kanobi (Kabegi region) and Didi Mitarbi (Bakuriani region).

While those households involved in tourism in the smaller villages of both regions focus on bed and breakfasts, accommodation and lending equipment, tourism offers in Stepantsminda and Bakuriani also include e.g. offering hiking tours, skiing lessons and lending horses or skiing equipment (see Table 21).

Table 21: Kinds of services offered to tourists by households

	Services Offered	N	%	% of Cases
Stepantsminda	Hotel accommodation (and services)	5	6.7%	10.6%
	("Private") guest house (or rooms) accommodation (and services)	27	36.0%	57.4%
	"Bed and Breakfast"	22	29.3%	46.8%
	Leading a café or similar enterprise	3	4.0%	6.4%
	Lending horses and / or carriages	5	6.7%	10.6%
	Lending other equipment	11	14.7%	23.4%
	Offering mountain / hiking tours (serve as a guide)	1	1.3%	2.1%
	Other services	1	1.3%	2.1%
	Total	**75**	**100.0%**	**159.6%**
Kazbegi villages	"Bed and Breakfast"	3	21.4%	21.4%
	Lending other equipment	11	78.6%	78.6%
	Total	**14**	**100.0%**	**100.0%**
Bakuriani	Hotel accommodation (and services)	8	16.3%	23.5%
	("Private") guest house (or rooms) accommodation (and services)	22	44.9%	64.7%
	"Bed and Breakfast"	7	14.3%	20.6%
	Leading a café or similar enterprise	1	2.0%	2.9%
	Lending skiing equipment	3	6.1%	8.8%
	Lending hiking equipment	2	4.1%	5.9%
	Lending other equipment	3	6.1%	8.8%
	Offering skiing lessons	3	6.1%	8.8%
	Total	**49**	**100.0%**	**144.1%**
Borjomi villages	("Private") guest house (or rooms) accommodation (and services)	14	53.8%	63.6%
	"Bed and Breakfast"	6	23.1%	27.3%
	Lending other equipment	6	23.1%	27.3%
	Total	**26**	**100.0%**	**118.2%**

Note: Multiple answers possible. Source: Own data.

Further information on touristic activities by private households can be found in Mamniashvili (2016, in preparation).

5.3.6 Summary of Living Conditions

The descriptive data presented in Chapter 5.3 shows the activities of the sampled households in two sectors that are essential to both regions: agriculture and tourism. Before modeling the behavioral intentions of the households regarding an enhancement of touristic activities, these data described the setting of the private households. This chapter will summarize the findings from the descriptive data and provide an overview of the overall living situation in the villages of the sample. The following table gives a schematic representation of core characteristics of the four groups in relationship to one another.

Table 22: Group profiles according to descriptive data

	Stepantsminda	Kazbegi villages	Bakuriani	Borjomi villages
Average income	+	--	++	-
Second* most important source of income	Wage empl. outside agr. & tourism	Self-empl. agr.	Self-empl. tourism	Self-empl. agr.
Animal husbandry	+ (cows), - (poultry)	++	+/-	+ (cows)
Animal products	- (except for sour cream)	++ (milk, cheese eggs)	-- (except for eggs and meat)	+ (except for meat)
Land use	mostly vegetable garden	mostly arable land	mostly vegetable garden	mostly vegetable garden
Cultivation of potatoes	+++	++++	++	+
Use of products - self-consumption	+	++	++++	+++ (self-consumption), + (selling)
Combination of involvement in agr. and tourism	+++	++	++++	+
Touristic activities	+++	++	++++	+

Note: * Pensions were mentioned most often in all groups; empl. = employment; agr. = agriculture. Source: Own data.

Generally, **income** is higher in the Bakuriani region than in the Kazbegi region and higher in the main villages than in the smaller villages. Comparing the average monetary incomes to the average cash income of rural households in whole Georgia, it shows that the incomes in Stepantsminda and Bakuriani are (a little) higher while in the summed smaller villages of Kazbegi and Borjomi, monetary income is lower than the country average. However, the mean differences of these four groups were not statistically significant. This result leads to the rejection of Hypothesis 26. There is one exception: A significant mean difference was found between the villages Juta (average monthly income: 115.42 GEL) and Stepantsminda (436.47 GEL) in Kazbegi. The large standard deviation in the case of Bakuriani might make it difficult to detect a significant difference.

The fact that 53 % of all households mentioned pensions as a **source of income** shows that about half of the households have at least one elderly person living in it. Being the second most often mentioned income source emphasizes the importance of self-employment in the agricultural sector for the research areas with the least importance in Stepantsminda. While wage employment other than in agriculture or tourism is quite important in Stepantsminda, it was mentioned roughly half as many times in the smaller villages and Bakuriani. Stepantsminda differs significantly regarding the share of households mentioning wage employment outside agriculture and tourism from Kazbegi villages and Borjomi villages, but no significant differences exist between Bakuriani and any other group. It is reasonable to assume that Stepantsminda supplies more jobs in wage employment because it holds the local government for the Kazbegi region while the local government for Borjomi is located in the village Borjomi which was not part of the survey. A cross tabulation showed that self-employment in agriculture is only combined with wage employment outside of this sector and

tourism by five of the cases in the whole sample. It can therefore be concluded that these two income sources mostly exclude each other. With regard to the sectors agriculture and tourism (both rather important for the study regions) it can be said that self-employment (ranking positions two and four respectively) is much more important than wage employment (positions eight and ten respectively).

By and large, households own low amounts of **livestock**. Cows and poultry are the kinds of animals that are owned most often. 59 % of the households own some amount of cows and 41 % own poultry, in most cases the amounts are between 1-5 and 1-10 respectively. Whereas sheep were more common in the past (during soviet times the number of sheep in the Kazbegi region was 20 times higher than in 2010[300]), only 8 % of all households mentioned owning sheep today. Consistent with the most common kinds of animals, the three most common **animal products** are milk, cheese and eggs. In some cases households also produce other dairy products, meat, wool and honey.

Also **cultivation of crops** is mostly on a low level. The only crop that is cultivated by the majority of households are potatoes (75 % of all respondents). Herbs are next in line with a little less than half of the households, followed by apples which are produced by less than a third. The extent of cultivation of potatoes is larger in the Kazbegi region and at the same time more heterogeneous than in the Borjomi region. This could be connected to two points. Due to the larger share of forest in Borjomi, there may be less space for the cultivation of potatoes than in Kazbegi. On the other hand, the location of Borjomi in the Lesser Caucasus might contribute to cheaper products which means that households can afford buying potatoes more easily. The slightly higher income for Borjomi could furthermore influence the choice of cultivating potatoes or not. It is interesting to note that productivity of potatoes is highest in Stepantsminda where it even exceeds the average productivity of whole Georgia.[301] In all other groups productivity is below the average productivity of whole Georgia and it is by far lowest in Bakuriani. Growing fodder is mentioned more often in the Kazbegi region than in the Borjomi region which could be connected to the larger numbers of animals in that region.

Looking at the overall **use of agricultural products**, 8-13 % of the households sell at least part of their production. The share of sold products from the overall production is mostly low, indicating that households still use most of their production for private consumption. **Selling of products** is more common for animal products than for crops. Aside from traders, neighbors and people from surrounding villages, tourists are also found among the customers of agricultural products, indicating a potential gain from tourism for households that produce agricultural goods. It was also found that there are households which combine producing agricultural goods and being active in **tourism supply**. This is especially true for the main villages Stepantsminda and Bakuriani with 33 % respectively 53 %, but also households in the smaller villages do so (23 % in Kazbegi villages and 15 % in Borjomi villages). The data gives no clear-cut answer to the question whether households substitute agricultural activities by touristic activities, but it shows that there is a considerable

[300] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010a, p. 49.
[301] Cf.: National Statistics Office of Georgia (GeoStat) 2013a, p. 29.

amount of households that supplement one activity with the other. It is possible that households abandon one activity in favor of the other, most likely substituting agriculture with tourism because many people only consider agricultural activities as an interim solution. [302] The diversification of activities is largest in the groups that generally show the largest shares of households involved in tourism. Using the **Theory of Planned Behavior** (Chapter 5.4) will give insights into the background factors that influence households in their intention to enhance touristic activities. In the smaller villages, there are not as many households that are active in the tourism business as in the main villages of both regions. Comparing the regions with one another, it shows that in Bakuriani there are more households involved in tourism than in Stepantsminda and the years of involvement are significantly higher in Bakuriani.

Group differences were furthermore examined on the basis of several hypotheses (see Chapter 4.2). The next table gives an overview of the rejection and confirmation of those hypotheses.

Table 23: Summary of hypotheses 19 through 26 and conclusions

Hypothesis		Conclusion
Hypothesis 19	Proportion of households involved in tourism is higher in Borjomi than in Kazbegi (**χ^2**)	Rejected
Hypothesis 20	Households in Borjomi have been involved in tourism for significantly more years than households in Kazbegi (**mean difference**)	Confirmed
Hypothesis 21	The number of touristic offers per household is significantly higher in Kazbegi than in Borjomi (**post hoc comparison**)	Rejected; but the numbers of offers are significantly higher in the main villages than in the summed smaller villages (one exception: Bakuriani and Borjomi villages)
Hypothesis 22	The number of people leaving in winter is significantly higher in Kazbegi than in Borjomi (**Mann Whitney U test**)	Confirmed
Hypothesis 23	The number of people leaving in summer is significantly higher in Borjomi than in Kazbegi (**Mann Whitney U test**)	Rejected
Hypothesis 24	The share of households involved in tourism offers is significantly larger in the main villages than in the smaller ones (**post hoc comparison**)	Confirmed
Hypothesis 25	The share of households mentioning the source of income “wage employment” is significantly larger in the main villages than in the smaller ones (**post hoc comparison**)	Confirmed for Stepantsminda and both groups with smaller villages; rejected for Bakuriani
Hypothesis 26	Significant **mean difference** of income between smaller villages and main villages	Rejected (except for Juta and Stepantsminda)

Source: Own data.

[302] Cf.: Kötschau 2012, p. 167; Kegel 2003, p. 154.

Although households in Borjomi have been involved in tourism for a significantly longer time period (**Hypothesis 20**), the current proportion of households involved in tourism is not significantly higher in the Borjomi region (**Hypothesis 19**). However, when comparing the shares of involved households between the main villages and the summed smaller villages for both regions, there are significant differences between all four groups which follow the proposed directionality (**Hypothesis 24**). It was assumed that households in Kazbegi offer a larger variety of services since they can accommodate tourists both in summer and in winter, but this assumption could not be confirmed (**Hypothesis 21**). On the whole, the offers are more diverse in the main villages than in the smaller villages.

In most cases there are no statistically significant mean differences of income between the smaller villages and the main villages (**Hypothesis 26**). This is somewhat surprising, considering the conspicuously high differences between some of the mean incomes (see Table 3). It is possible that some of the differences fail to produce significant results due to a power problem: the subsamples for the smaller villages are in some cases rather small.[303] The hypothesis that wage employment is most prominent in the main villages (**Hypothesis 25**) was confirmed for Stepantsminda, which is the regional capital of Kazbegi, but in the case of Bakuriani this assumption was rejected. In light of the fact that the descriptive analysis of income sources revealed that self-employment in tourism is the second most frequently mentioned source of income in Bakuriani, this is result is not surprising. It shows that tourism is handled differently in Stepantsminda and Bakuriani: With 22 %, the share of households that are self-employed in tourism in Bakuriani is more than double as high as in Stepantsminda (9 %).

The number of seasonally leaving household members is significantly higher in Kazbegi during the winter time, but there is no significant difference for the summer time (**Hypothesis 22** and **Hypothesis 23**).

5.4 Behavioral Intentions of Local Private Households

When Fishbein and Ajzen introduced their Theory of Reasoned Action, the predecessor of the Theory of Planned Behavior, in the 1970's they suggested to use multiple regression analysis to estimate standardized regression coefficients which should serve as estimates for the relative weights of attitude and subjective norm in the prediction of behavioral intention.[304] However, in the past forty years, considerable methodological development has taken place. Increased computational power of personal computers allowed for the realization of new analysis techniques such as e.g. structural equation modeling. Structural equation models (SEMs) have the advantage of calculating measurement models and structural models simultaneously[305], thereby considering measurement errors as well and rendering unbiased regression coefficients. While a structural model specifies relationships (which can be regressions or correlations) between latent variables, measurement models define the latent factors by observed variables. The common approach to test an SEM is to first test the measurement model through a confirmatory factor analysis (CFA) and fitting the measurement model so that the proposed structure and the empirical data correspond well. Changes

[303] The small sample sizes occurred because the amounts of sampled households were adapted to the number of inhabitants per village in relation to the overall sample.
[304] Cf.: Fishbein & Ajzen 1975, p. 303.
[305] Cf.: Byrne 2010, pp. 12f.

that are made to the original structure always need to be justifiable from a theoretical perspective. The full SEM with directional relationships is tested in a second step which can include further theory-driven modifications.[306] Since SEMs integrate measurement models within the framework of a structural model, they are also seen "as a combination of factor analysis and regression or path analysis."[307] Being no exploratory approach, testing an SEM requires a theory that can be tested empirically. Hypotheses are derived from a theory or several theories to test the proposed relationships.[308]

In 1989, Youjae used structural equation modeling as a new way to represent the expectancy-value combination for the measure of attitude. An advantage of this new approach was that SEM provides model fit values in order to determine whether the proposed model fits the empirical data. SEM also models measurement errors and opens ways to check for reliability. Youjae was able to prove that convergent validity was higher for an expectancy-value model of attitude which allowed interdependence between the indicators than for the traditional model which only gave a point representation by using a hierarchical model comparison.[309] Although researchers still use multiple regression analysis for the analysis of research questions related to the Theory of Planned Behavior (TPB)[310], the use of SEMs has become more and more frequent.[311] Hankins, French & Horne (2000) contrast the use of multiple regression versus the use of SEMs. They consider SEMs as an extension of multiple regression models since they combine different statistical techniques and emphasize the advantage of SEM over multiple regression for the analysis of the TPB since it examines the degree to which variables are related to each other while at the same time assessing model quality.[312]

According to Jöreskog (1993), a researcher should reject a model if it does not hold in the exact same way that he or she defined the model before the data was obtained. He terms this as strictly confirmatory. In practice, however, it is common to modify a model and then retest it with the same data set. Jöreskog calls this approach model generating.[313] Following this definition, the present study is also model generating. While using the Theory of Planned Behavior to explain behavioral intentions, the structural equation model is modified in the process. Even though the TPB has been applied in myriad settings (see Chapter 3.2), each of these settings requires different item wordings and the samples to which these are administered differ greatly. Under these circumstances it cannot be expected that an initial model will render satisfactory model fit results.

[306] Cf.: Schmidt & Herrmann 2011, pp. 2553f.
[307] Hox & Bechger 1998, p. 354.
[308] Cf.: Weiber & Mühlhaus 2014, pp. 3f.
[309] Cf.: Youjae 1989, pp. 78 and 72.
[310] Cf.: E.g. Knowlden, Sharma & Bernard 2012; Hansson, Ferguson & Olofsson 2012; Hrubes, Ajzen & Daigle 2001.
[311] Cf.: E.g. Bamberg, Ajzen & Schmidt 2003; Leeuw, Valois, Morin & Schmidt 2014; Mayhew, Hubbard, Finelli et al. 2009. Just before the beginning of the 21st century, Reinecke (1999) wrote an article on how to model interaction effects in the framework of the TPB in structural equations.
[312] Cf.: Hankins, French & Horne 2000, pp. 154f.
[313] Cf.: Jöreskog 1993, p. 295.

5.4.1 Basic Model

Sample

While the complete data set of the household survey comprises 301 cases in total, there are 247 cases which answered the items on the Theory of Planned Behavior regarding an enhancement of touristic activities. The other 54 cases refused answering this module of the questionnaire and were therefore excluded from the following analyses. If not stated otherwise, the sample size for all procedures in this chapter is n = 247. The following table gives the numbers of households that answered the TPB-items and those that refused answering the additional module. The numbers are given for each research village separately. In Sno, all surveyed households answered the TPB-items and in the two main villages Stepantsminda and Bakuriani the amounts of refusals are comparatively low. In the village Kanobi no respondent was willing to answer the items. The secluded location of the village Kanobi causes activities in the tourism sector to be highly unlikely, making questions in this direction somewhat bizarre.

Table 24: Sample size for TPB analysis per village

	N of households available for analysis of SEM	N of households that refused answering TPB-module	% of households that refused answering TPB-module
Stepantsminda + Gergeti	87	5	5%
Sno	24	0	0%
Kanobi	0	9	100%
Juta	6	3	33%
Zemo + Kvemo Mleta	12	8	40%
Bakuriani	49	6	11%
Tsikhisjvari	18	6	25%
Bakurianis Andeziti	8	10	56%
Didi Mitarbi	7	3	30%
Tsagveri	36	4	10%
Total	**247**	**54**	**18%**

Source: Own data.

If a sample size is considered large enough for rendering reliable results depends on the kind of method used. In the context of structural equation modeling, Kline (1998) offers rough guidelines on the size of a sample. He reports that samples of n < 100 should be considered as small, n between 100 and 200 medium and n > 200 large. Kline furthermore relates that it is reasonable to consider the ratio between sample size and the number of parameters to be estimated within the model. The more complex a model is, the larger the sample should be. However, opinions on what the ratio should be differ. According to Kline, a ratio of 20:1 is desirable, while a ratio of 10:1 is more realistic and a ratio of less than 5:1 is not recommendable.[314] In a more recent study Lee & Song (2004) found that two or three times the number of parameters are sufficient for Bayes estimations, whereas four

[314] Cf.: Kline 1998, p. 112.

or five times the number of parameters is needed for maximum likelihood (ML) estimations.[315] The model calculated here presents with 55 parameters which results in a ratio of 4.5.

Descriptive Statistics for Single Items an Introduction of Measurement Models

Before turning to the full model as proposed by the Theory of Planned Behavior, the measurement models will be introduced. Item wordings were derived from other applications of the TBP and recommendations given by Ajzen (2006). A detailed description is given in Chapter 3.2.6.

The response scales for all items had five scale points and were fully verbalized except for one question asking the respondent to rate various semantic differentials (e.g. stupid – smart). For intention and subjective norm, four items per construct were included in the questionnaire and for perceived behavioral control five items were included. Several semantic differentials were assessed for attitude in order to see if it is possible to find a more detailed differentiation of attitude.

To test the theoretically proposed allocation of observed items to latent factors before estimating the structural equation model, several exploratory factor analyses (EFAs)[316] were carried out in IBM SPSS Statistics 22. This data-driven approach does not require any assumptions regarding the relationships between indicators and factors and also the number of latent factors does not have to be specified. It examines the underlying structure and is often used in initial stages of research for determining the number of factors and for construct validation.[317] Several EFAs with different combinations of variables were conducted. When only using the variables that are expected to measure the single constructs in separate EFAs, INT and SN resulted in one factor solutions. An EFA of the PBC items showed that the fifth item "The decision to enhance tourism supply in the next year is beyond my control … strongly disagree (1) – strongly agree (5)" (pbcd5br) does not load on the same factor and showed no significant correlations with any of the other PBC items; therefore it was excluded. In the case of the twelve semantic differentials for the measurement of ATT, three factors were extracted. In order not to make the basic model too complex and since the main focus will not be on the attitude construct, the factor with the highest factor loadings (i.e. atd2br, atd10br, atd11br and atd12br) was retained. A reliability analysis showed that Cronbach's α could be improved by deleting item atd2br since this item did not fit the scale, so the item was dropped. A joint exploratory factor analysis of all INT and SN items revealed that these two factors do not discriminate well. Particularly problematic was item snd2br ("It is expected of me that I enhance tourism supply in the next year.") which has much higher bivariate correlations with INT items than with the other SN items. Even if the extraction of two factors was demanded manually, this item still loaded along with the INT variables, while the other SN items loaded as previously hypothesized on a second factor (with a factor correlation of .65, equaling 42 % of shared variance). Since it could not be proven empirically that item snd2br actually belonged to the SN scale it was excluded. Submitting all remaining items (int1br, int2br, int3br, int4br, atd10br, atd11br, atd12br, snd1br, snd3br, snd4br, pbcd1br, pbcd2br, pbcd3br and pbcd4br; see Table 25 for item wordings) to one joint factor analysis produces a three factor solution, a differentiation between INT and SN items is not given. However,

[315] Cf.: Lee & Song 2004, p. 680.
[316] All exploratory factor analyses were carried out using principal axis factoring since it takes the possibility of cross-loadings into consideration and oblimin rotation to allow for an oblique-angled arrangement of factors (i.e. the factors can be correlated). The analyses were computed with IBM SPSS Statistics 22.
[317] Cf.: Brown 2006, pp. 14 and 41.

when demanding the extraction of four factors as theoretically implied, the items are assigned as previously assumed. The initial model fit – as calculated by the CFA – was not satisfactory but could be improved by removing variables int3br and int4br ("How likely is it for you to enhance tourism supply in the next year?" and "I plan to enhance tourism supply in the next year." respectively) and also variable pbcd3br ("I am confident that I could enhance tourism supply in the next year if I wanted to."; it showed comparatively high correlations with some of the INT and SN variables). Since it is desirable to construct a parsimonious model, the reduction of variables is beneficial in order to create a simpler model.[318]

The following table shows means, standard deviations and the amount of missing values for the single items that were used to estimate the basic structural equation model for the analysis of the TPB. All items were rated on a 5-point scale. In some cases the original codings of the rating scales were counterintuitive. These were reversed so that high values indicate high intention, a positive attitude, strong pressure from subjective norm and high perceived control.

[318] Cf.: Kline 2011, p. 102.

Table 25: Descriptive statistics of basic model items and corrected item-total correlation for the respective scale

Con-struct	Vari-able Name	Item Wording	Mean	SD	Missing Cases	Corrected Item-Total Correlation
INT	int1br	I **expect** to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5).	3.09	1.29	0.8%	.82
INT	int2br	I **intend** to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5).	3.13	1.25	1.2%	.82
ATT	atd10br	For me to enhance tourism supply in the next year is … **wrong** (1) - right (5).	4.09	0.97	13.0%	.89
ATT	atd11br	For me to enhance tourism supply in the next year is … **reckless** (1) - careful (5).	4.14	0.93	9.7%	.92
ATT	atd12br	For me to enhance tourism supply in the next year is ... **stupid** (1) - smart (5).	4.20	0.94	8.1%	.86
SN	snd1br	Most people who are important to me think that ... I **should** not (1) - I have to (5) ... enhance tourism supply in the next year.	3.87	0.90	0.0%	.44
SN	snd3br	People who are important to me **want** me to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5).	3.58	1.00	2.0%	.51
SN	snd4br	I feel **obliged** to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5).	3.02	1.23	0.8%	.54
PBC	pbcd1br	Whether I enhance tourism supply in the next year is entirely **up to me** … strongly disagree (1) - strongly agree (5).	2.91	1.23	1.2%	.37
PBC	pbcd2br	For me to enhance tourism supply in the next year is … very **difficult** (1) - very easy (5).	2.00	0.82	0.8%	.46
PBC	pbcd4br	For me to enhance tourism supply in the next year is … very **impossible** (1) - very possible (5).	3.09	1.23	0.8%	.50

Note: All items were measured on a 5 point Likert scale; SD = standard deviation, INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control. Source: Own data.

Except for the means of items pbcd1br and pbcd2br, all means exceed the medium scale score of 3, indicating that there is a slight tendency towards an intention, a positive attitude and an encouraging subjective norm towards enhancing the tourism supply in the next year. Perceived behavioral control is mixed with two PBC-items slightly hinting at perceived inability to enhance the tourism supply and one item very close to the middle of the scale. However, considerable standard deviations show that the sample is heterogeneous and not all households answered affirmatively. Attitude shows the

highest mean values, implying that people generally have a favorable attitude towards tourism enhancement. While households overall still perceive some control over the behavior, the values of the PBC items show the lowest means and are quite close to the center of the scale. Except for the attitude items, the amount of missing values is below 2%. For the attitude items 8.1, 9.7 and 13% are missing. Although there is no clear-cut score on how much data can be missing when using imputation techniques, Kline (1998) states that the imputed values (mean substitution, regression-based estimates or pattern matching) are "most sensible" if the share of missing values is below 10%.[319] Schafer & Graham (2002) state that "ML [maximum likelihood, J.H.] estimates are not substantially biased under MCAR [missing completely at random, J.H.] or MAR [missing at random, J.H.]"[320] and Arbuckle (2011) affirms that AMOS renders efficient and consistent estimates if MAR is given[321]. There is no theoretical reason to believe that the missingness in the data follows a certain pattern and according to Little's MCAR test, the data is MCAR. Consequently, data is analyzed using the full information maximum likelihood (FIML) estimator. It should be noted that most estimation techniques require data to be distributed normally (i.e. follow both univariate and multivariate normal distribution) because results may be biased if the normality assumption is violated.[322] The Kolmogorov-Smirnov test of normality[323] showed that the distributions of the model variables do not follow a normal distribution. Mardia's test for multivariate kurtosis shows that values are beyond the critical ratios and lead to the expected result that multivariate normal distribution cannot be assumed.[324] To accommodate for the fact that the assumption of normal distribution is violated, p-values of the estimates were bootstrapped and the Bollen-Stine bootstrap was estimated (see Chapter 5.4.3).[325] In order to have a look at modification indices and some other model fit measures which AMOS only calculates for full data sets, imputed data sets and a covariance matrix of the model variables were used in different steps to identify the basic model, but the following results presented here were calculated using the raw data set with missing cases.

The corrected item-total correlations give the correlations of the respective item with the scale that would result from the rest of the items that were used for the measurement of that construct. This value shows how well the item discriminates.[326] The higher this value is, the better because it is assumed that the items share a common underlying cause und should therefore correlate with one another. It is recommended that the corrected item-total correlation should be ≥ .5.[327] Both INT and ATT items show very high values, but for SN and PBC there are one and two items respectively that remain below this threshold. However, in this case a further reduction of the number of items results in a bad representation of the empirical data structure by the overall model and it is therefore desirable to retain the variables in the model. Further methods (namely Cronbach's α and CFA) will be used to determine whether these variables can be included in the overall model.

[319] C.f.: Kline 1998, p. 75.
[320] Schafer & Graham 2002, p. 164.
[321] Cf.: Arbuckle 2011, p. 270.
[322] Cf.: Kline 1998, pp. 81–83.
[323] Cf.: Brosius 2008, pp. 392f.
[324] Cf.: Weiber & Mühlhaus 2014, pp. 181f.
[325] AMOS offers an asymptotically distribution free estimator to account for non-normality, but this estimator requires a large sample size (n ≥ 2000). Therefore, FIML is the best option at hand.
[326] Cf.: Brosius 2008, p. 810.
[327] Cf.: Weiber & Mühlhaus 2014, p. 139.

Table 26 summarizes key values for the latent constructs. Means, standard deviations and Cronbach's α were calculated using IBM SPSS Statistics 22. The correlations are the result of a simultaneous confirmatory factor analysis which was carried out in IBM SPSS AMOS 22 to assess convergent and divergent validity of the latent constructs.

Table 26: Means, standard deviations, Cronbach's alpha coefficients and zero-order correlations between latent constructs

Construct	Number of Items	M	SD	α	1	2	3 (n=247)	4
1 **Intention[a] (n=244)**	2	3.11	1.21	.903	1	.309***	.803***	.738***
2 **Attitude[a] (n=215)**	3	4.14	0.90	.947		1	.551***	.275**
3 **Subjective Norm[a] (n=242)**	3 (4)	3.49	0.82	.676 (.75[b])			1	.662***
4 **Perceived Beh. Control[a] (n=244)**	3 (4)	2.67	0.84	.617 (.755[b])				1

Note: *** p < 0.001, ** p < 0.05, M = mean, SD = standard deviation, α = Cronbach's alpha coefficient. [a] Theoretical range: 1 to 5, [b] Cronbach's α for a four-item solution; Beh. = Behavioral. Source: Own data.

The mean values of the constructs reflect what was already apparent in the mean values of the single items: Attitudes are generally favorable and have the highest value, followed by subjective norm. While intention also still scores affirmatively regarding an enhancement of touristic activities, this construct shows the highest standard deviation, indicating that the sample is most heterogeneous regarding the dependent construct as opposed to the explanatory constructs. When looking at the standard deviation, it should be kept in mind, that the distribution is not normal. However, the distribution of the variables is not extremely skewed to either side but fails to have a normal distribution because it has two peaks (on scale points 2 and 4) and a gap in the middle (scale point 3). The values of the standard deviation can therefore still be used to compare how heterogeneous the answers are.[328]

Cronbach's α is a coefficient measuring internal consistency of a scale. Rough guidelines state that a value of > .8 is considered to be good and values > .7 are also still accepted.[329] Kline states that values around .7 can be considered as adequate, while values below .5 are too unreliable because more than half of the variance would be caused by unaccounted variables. Values of .8 or .9 are considered to be good or very good respectively.[330] Peter (2001) distinguishes thresholds according to the number of items used for a scale. If more than three indicators are used, she recommends .7 as point of reference whereas for two or three indicators .4 would suffice.[331] Given that Cronbach's α is influenced by the number of items in the scale[332], it is reasonable to consider lower thresholds for scales with few items. The constructs intention and attitude provide good values for Cronbach's α. In the cases of subjective norm and perceived control, two values are given. Cronbach's α for subjective

[328] In order to check p-values in the model, model parameters are bootstrapped in Chapter 5.4.3.
[329] Cf.: Brosius 2008, pp. 806–808.
[330] Cf.: Kline 2011, pp. 69f.; Brown 2015, p. 309.
[331] Cf.: Peter 2001, p. 180.
[332] Cf.: Brosius 2008, p. 808.

norm is .75 if the variable snd2br "It is expected of me that I enhance tourism supply in the next year … strongly disagree (1) – strongly agree (5)." is included in the scale. However, this variable causes problems in the overall model due to very high correlations with the intention items. As a consequence, the standardized regression coefficient of SN → INT is higher than 1 if the variable is included and the model fit values indicate that the model with the variable snd2br does not fit the data well. Therefore, the variable was excluded. A similar effect occurs when the variable pbcd3br "I am confident that I could enhance tourism supply in the next year if I wanted to … strongly disagree (1) – strongly agree (5)" is used to measure PBC alongside those variables mentioned in Table 26 – Cronbach's α rises to .755. At the same time, this variable shows comparatively high correlations with items used to measure INT and SN, causing an overall negative effect on model fit if the variable is included in the model. For these reasons the variable was excluded from the basic model. It should be noted that Cronbach's α has to be handled with care. The coefficient is criticized for being biased easily when assumptions are not met which is often the case in practical applications. Especially in the personality domain, scales are hardly truly unidimensional, preventing Cronbach's α from rendering reliable scores. Problematic is also the fact that the process of deleting items due to program recommendations results in a sample statistic that cannot be inferred to alternative samples.[333]

The second half of Table 26 shows the zero-order correlations between all model constructs. All correlations are significant and positive. There are no set rules on the interpretation of the strength of correlations, but rules of thumb exist. In the social sciences, the correlations of the independent constructs ATT & SN and SN & PBC with values above .5 can be considered high. The independent constructs ATT & PBC have a correlation of medium strength.[334] Both the correlations of INT & SN and INT & PBC are very high according to rules of thumb, while INT & ATT correlate at a medium level. Contrary to bivariate zero-order correlations, the structural equation model (SEM) with regression relationships and all three explanatory constructs will give partial regression weights while keeping the respective other constructs constant.

Following EFAs (which also provided Cronbach's α) to examine the underlying structure of the variables, the determined factors were submitted to a joint confirmatory factor analysis (CFA). A CFA differs from an EFA in that it needs a conceptual framework that serves as the input to define relationships between both items and factors, but it does not propose directionality (i.e. correlations are assumed, but not regression relationships as in SEMs).[335] This theoretical framework is given by the Theory of Planned Behavior (TPB) (see Chapter 3.2) and was empirically confirmed by the exploratory approach. In order to test the proposed structure of the assignment of variables to latent constructs and to determine discriminant validity, a CFA was carried out. Another advantage of CFAs is that they estimate measurement errors of the measurement models[336] and they compare the empirical covariance matrix of the data with the model-implied covariance matrix that is proposed by the theoretical structure. This gives an indication of whether or not the items that were used to measure the latent constructs are suitable indicators. [337] The CFA was conducted with the program

[333] Cf.: Dunn, Baguley & Brunsden 2014, pp. 402–404.
[334] Cf.: Kühnel & Krebs 2006, pp. 404f.
[335] Cf.: Brown 2006, p. 14.
[336] Cf.: Weiber & Mühlhaus 2014, pp. 143 and 148.
[337] Cf.: Paxton, Hipp & Marquart-Pyatt 2011, pp. 7–11.

IBM SPSS AMOS 22 using the maximum likelihood estimator. Results of the final CFA with the bivariate correlations of all latent constructs are shown in Figure 17.

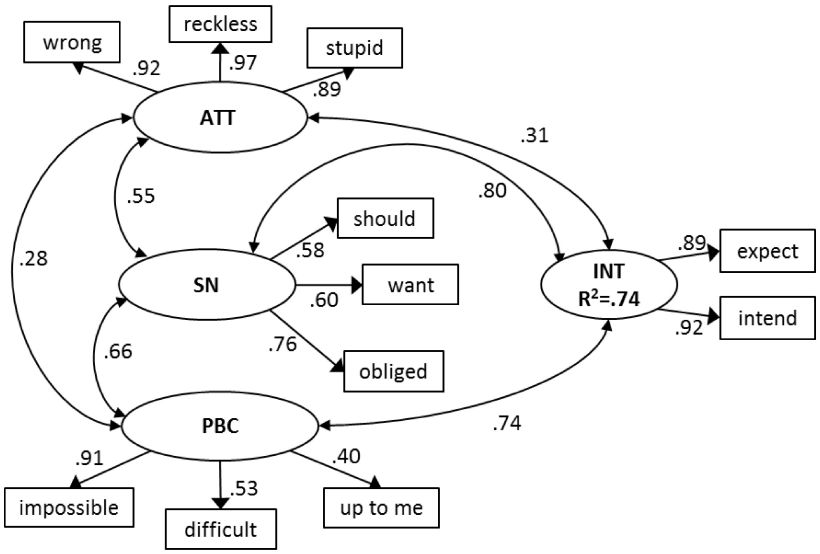


Figure 17: Results of CFA

Note: Model fit: $\chi^2/df = 1.378$, $p = .06$, RMSEA = .039, p-close = .745, and CFI = .99. All coefficients are standardized. For ease of visual representation, error terms and values of intercepts are not depicted. All values are significant with at least $p < 0.05$. INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control. Arrows mark regressions, double-headed arrows mark correlations. Rectangular boxes represent items, ellipses represent latent factors. Source: Own calculations from own data.

Model Fit

The structural equation model was estimated in IBM SPSS AMOS 22 using the maximum likelihood estimator. It is unwise to rely on one single value to confirm or reject a model.[338] Different fit indices reflect different aspects of model fit. Therefore, various fit indices were used to assess model fit.[339] Generally, model fit indices confirm good model fit for the model presented here. The following table comprises several model fit indices for the basic model and recommended thresholds.

[338] Cf.: Weiber & Mühlhaus 2014, p. 221.
[339] Cf.: Kline 1998, pp. 130f.; Weiber & Mühlhaus 2014, p. 222.

Table 27: Fit indices, thresholds and empirical values of model fit

	Thresholds		
Fit Index	**Good Fit**	**Acceptable Fit**	**Empirical value**
Overall Model – Inferential			
P-Value	.05 ≤ p ≤ 1.00	0.01 ≤ p ≤0.05	0.06
RMSEA	0 ≤ RMSEA ≤ 0.05 (Weiber & Mühlhaus 2014, p. 205; van de Schoot, Lugtig & Hox 2012, p. 488)	0.05 ≤ RMSEA ≤ 0.08 (Weiber & Mühlhaus 2014, p. 205; van de Schoot, Lugtig & Hox 2012, p. 488)	0.039
P Close	.10 ≤ p ≤ 1.00	0.05 ≤ p ≤ .10	0.745
Overall Model – Descriptive			
χ^2 / df	0 ≤ χ^2 / df ≤ 2	χ^2 / df ≤ 3 (Kline 1998, p. 128)	52.368 / 38 = 1.378
Incremental Indices			
NFI	.95 ≤ NFI ≤ 1.00 (Bentler & Bonett 1980)	.90 ≤ NFI ≤ .95	0.965
TLI (=NNFI)	.97 ≤ TLI ≤ 1.00 (Tucker & Lewis 1973)	.95 ≤ TLI ≤ .97	0.983
CFI	.95 < CFI ≤ 1.00 (van de Schoot, Lugtig & Hox 2012, p. 487)	.90 < CFI < .95 (van de Schoot, Lugtig & Hox 2012, p. 487)	0.99
Incremental Indices – Information Criteria			
AIC	The model with the smallest AIC should be chosen (Weiber & Mühlhaus 2014, p. 219).		130.368 (default) vs. 154 (saturated)

Note: RMSEA = root mean square error of approximation, df = degrees of freedom, SRMR = standardized root mean square residual, NFI = normed fit index, NNFI = non-normed fit index, TLI = Tucker-Lewis index, CFI = comparative fit index, AIC = Akaike information criterion. Source: Own presentation, based on mentioned sources.

The χ^2 value itself is an inferential fit index and very sensitive to sample size. Even small differences between the observed and the model-implied covariance matrix can result in a significant χ^2 value if the sample size is large or if a small part of a complex model differs from the empirical covariance matrix. It is recommended to consider the degrees of freedom when looking at the χ^2 value. As a rough guideline, the ratio of the χ^2 value and the degrees of freedom (χ^2/df) should be less than three.[340] A more conservative suggestion is to have values below two. The basic model presented here shows a χ^2 value of 52.368. Divided by the 38 df this results in 1.378, thereby meeting the more conservative criteria of a value below two. The p-value of the χ^2 difference test is 0.6 and just above the threshold for good fit.

Root Mean Square Error of Approximation (RMSEA) is sensitive to model complexity through the number of estimated parameters, but it is also sensible to misspecifications. Furthermore, the p close value tests the closeness of fit of the RMSEA, i.e. it gives an indication of whether "the RMSEA is 'good' in the population"[341]. The value of p close can be regarded as the probability of this test.[342] Both RMSEA (= .039) and the associated p close value (= .745) are well in the boundaries for good model fit.

[340] Cf.: Weiber & Mühlhaus 2014, p. 204; Kline 1998, p. 128.
[341] Byrne 2010, p. 81.
[342] Cf.: Byrne 2010, pp. 80f.

Whereas inferential fit measures are naturally sensitive to sample size (since they are statistical tests), descriptive fit measures such as the Standardized Root Mean Squared Residual (SRMR) are relatively robust even if data does not follow a multivariate normal distribution. The cut-off values of descriptive measures should be seen as a rule of thumb since they are the results of simulation studies.[343] The SRMR is based on the covariance residuals and resumes the value zero if the model fits perfectly.[344] It belongs to the absolute fit measures. The SRMR is not computed at this stage because it requires a full data set whereas the data used here presents missing cases as well. However, the SRMR will be used for the model comparison in Chapter 5.4.4 which is conducted with an imputed data set.

All incremental fit indices compare the default model to an independence model where all paths are set free. Information criteria furthermore compare the default model to a fully saturated model that allows all model variables to correlate with each other.[345] The Bentler-Bonett Normed Fit Index (NFI), the Bentler-Bonett Non-Normed Fit Index (NNFI) and the Bentler Comparative Fit Index (CFI) are incremental fit indices because they compare the specified model with a null model that assumes that all variables are uncorrelated, thus indicating the total proportion of explained variance of the default model in comparison with the null model. The CFI is less sensitive to sample size than the NFI. The NNFI (also known as Tucker-Lewis Index, TLI) takes model complexity into account and rewards parsimonious models.[346] The TLI can indicate over-fitting since it takes values above 1 if the model contains more parameters than necessary.[347] NFI, TLI and CFI perform reasonably well in the tested model. Once again, the values exceed the thresholds for good fit (see Table 27 for values).

The information criteria Akaike's Information Criterion (AIC) and Bayes' can not only be used to compare the default model with a fully saturated and an independence model, but also to compare different specified models with one another. All information criteria sort of punish complex models and will give better values for more parsimonious models.[348] When comparing the fully saturated model that allows correlations between all model variables with the specified model, the tested model is the one to be preferred. In conclusion it can be said that the presented basic model showed good model fit. Different fit indices were chosen in order to cover different aspects of model fit and all of these indices testify good model fit.

Model Results

Figure 18 shows the results of the SEM for the basic TPB. The correlation coefficients between the independent constructs remain those of the CFA and were already discussed. The regression weights in the model representation are partial regression weights which are calculated while keeping the other explanatory variables constant and correcting for the correlations of the independent constructs with one another.[349]

[343] Cf.: Weiber & Mühlhaus 2014, pp. 208 and 210-212; Kline 1998, 128f.
[344] Cf.: Kline 1998, p. 129.
[345] Cf.: Weiber & Mühlhaus 2014, pp. 212–216.
[346] Cf.: Kline 1998, pp. 129f.
[347] Cf.: Weiber & Mühlhaus 2014, p. 216.
[348] Cf.: Weiber & Mühlhaus 2014, p. 219.
[349] Cf.: Kline 2011, p. 105.

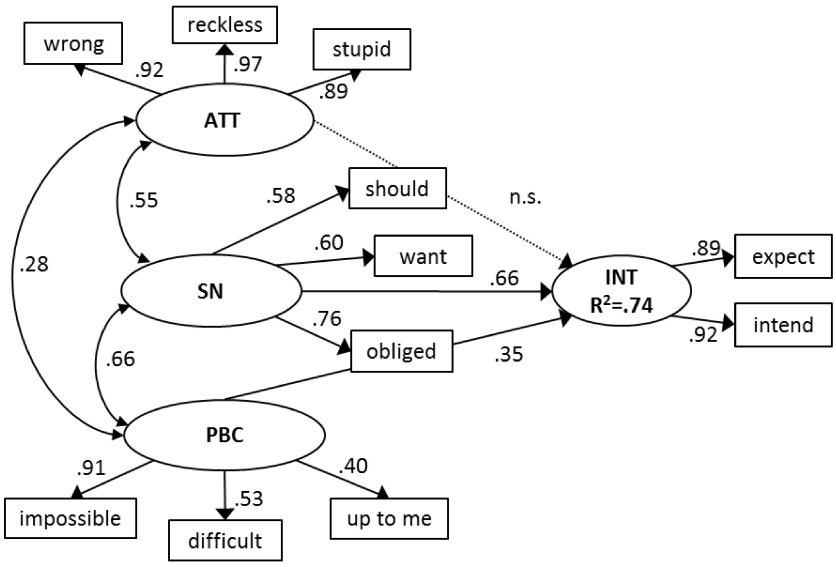


Figure 18: Results of TPB model estimation – basic model

Note: Model fit: $\chi^2/df = 1.378$, $p = .06$, RMSEA = .039, p-close = .745, and CFI = .99. All coefficients are standardized. For ease of visual representation, error terms and values of intercepts are not depicted. All values are significant with at least $p < 0.05$. n.s. = not significant. INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control. Arrows mark regressions, double-headed arrows mark correlations. Rectangular boxes represent items, ellipses represent latent factors. Source: Own calculations from own data.

With a standardized regression weight of .66 (SE = .319, $p < .001$) SN has by far the largest influence on INT, being almost twice as large as the same value for PBC (.35, SE = .276, $p < .001$). These coefficients confirm the structural Hypothesis 2 and Hypothesis 3. Contrary to theoretical expectations, ATT has a negative influence of -.15 (SE = .096, $p = .053$) on INT, although the correlation between ATT and INT is positive. This shift in the algebraic sign can be an indication of multicollinearity but since the influence from ATT on INT is not significant anyhow, Hypothesis 1 is rejected. Comparing the partial regression weights to the zero-order correlations[350] of the explanatory constructs with INT (see Table 26), it shows that the absolute values of the regression weights are all lower than the correlation coefficients, indicating that the independent constructs share some covariance with each other. This is reasonable considering the significant correlations among the explanatory constructs which testify that they are related and confirm Hypothesis 4. Together, all independent latent factors are able to explain 74 % of the variance in INT. Hypothesis 5 on the relative size of the effect of ATT on INT compared to SN on INT is confirmed since the model fit decreases significantly when the two parameters are constrained to be equal and the effect of SN on INT is larger. There is, however, no significant difference between the effect of SN on INT and the effect of PBC on INT.

The measurement models for all latent constructs show that the stronger the intention is and the more positive the attitude is and the higher the value of subjective norm is and the more control a person perceives, the higher is the agreement with the items of the respective constructs (thereby explaining part of the variance in the indicators). This confirms Hypothesis 6.1 through Hypothesis

[350] These correspond to the bivariate regression weights when INT is regressed on the single explanatory constructs.

6.11 on the measurement models. Loadings are considered to be acceptable if they are around .5 or .6, good loadings are above .7.[351] In this model, there is only one loading that has a value that is below .5. This basic model is the starting point for further analyses in the following sections.

5.4.2 Integrated Model with MIMIC Constructs

The following paragraphs will describe the addition of formative measurements to the basic model. In the framework of the Theory of Planned Behavior, belief-based measures can be used in order to assess the underlying structure of the explanatory constructs (for further information see Chapter 3.2.2). Unlike direct measures, beliefs are not influenced by the latent construct, but exert their own influence on the latent construct which makes them formative indicators (as opposed to the direct reflective indicators). One fundamental difference of formative measures is that the measurement error is modeled at the construct level instead of the item level.[352] If there are no empirical values for the latent variable, formative measurement models cannot be identified,[353] but formative indicators can be integrated into the existing model by adding them as explanatory variables to the respective constructs,[354] thereby creating so-called MIMIC (= multiple indicators and multiple causes) constructs.[355] It is generally rather difficult to know if a researcher incorporated all possible causes of a formative construct by the required indicators. Most cases therefore make it necessary to model an error term at the construct level. At the same time this does not relieve the researcher of his or her duty to thoroughly explore the set of indicators for measuring the construct.[356]

Single MIMIC Constructs

Before estimating the overall model, MIMIC constructs were calculated for ATT, SN and PBC individually without the rest of the model. Five behavioral beliefs were assessed for ATT; in the case of SN, four normative beliefs were assessed and five control beliefs were measured for PBC (for information on the elicitation of beliefs see Chapter 3.2.6). Multiplicative composites were created by multiplying behavioral beliefs, normative beliefs and control beliefs with outcome evaluations, motivation to comply and power of control factors respectively. The multiplicative composites with these subjective assessments were compared to using only beliefs as formative indicators. In all three cases, the use of beliefs without a combination with the subjective assessments empirically provided better model fit than the multiplicative composites. Therefore, further analyses were conducted using only the beliefs. Since the attitude construct fails to have a significant influence on intention, the underlying behavioral beliefs of ATT are not of interest.[357] Table 28 provides an overview of some descriptive statistics for normative and control beliefs.

[351] Cf.: Chin 1998, p. 325.
[352] Cf.: Jarvis, MacKenzie & Podsakoff 2003, p. 201.
[353] Cf.: Weiber & Mühlhaus 2014, p. 41.
[354] Formative measurement models themselves cannot be identified. They need to be incorporated into a larger model with reflective measurement models or they need additional reflective measures themselves (cf. Diamantopoulos 2006, p. 14, see also Jarvis, MacKenzie & Podsakoff 2003, p. 213).
[355] Cf.: Hauser & Goldberger 1971, pp. 95–98; Kline 2011, pp. 282–286.
[356] Cf.: Diamantopoulos 2006, p. 12.
[357] A MIMIC construct for ATT was created and tested within the overall model, but the influence from ATT on INT remained insignificant. On the other hand, model fit deteriorated and for the sake of parsimony, the formative indicators for ATT were dropped from the model.

Table 28: Descriptive statistics of MIMIC items

Construct	Variable Name	Item Wording	Mean	SD	Missing Cases
SN	snb1br	Other people in my **neighborhood** would not (1) … would (5) enhance tourism supply in the next year.	3.68	1.04	1.2%
SN	snb2br	The **government** allows me to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5).	3.82	0.92	1.2%
SN	snb3br	My **family** thinks that I should not (1) … I have to (5) enhance tourism supply in the next year.	3.84	1.00	1.2%
SN	snb4br	My **friends** would not (1) … would (5) approve of me enhancing tourism supply in the next year.	3.85	0.95	1.2%
PBC	pbcb1r	How often do you feel **ill or tired**? – Very frequently (1) … very rarely (5).	2.84	1.40	4.0%
PBC	pbcb2r	How often do you encounter unanticipated events that decrease your **time budget**? – Very frequently (1) … very rarely (5).	3.50	1.11	1.2%
PBC	pbcb3r	How likely is it for you to get a **loan** from a bank? – Very unlikely (1) … very likely (5).	2.59	1.38	2.0%
PBC	pbcb4r	How likely is it for you to find **workers** you can hire? – Very unlikely (1) … very likely (5).	3.11	1.36	1.2%
PBC	pbcb5r	How often do unanticipated **financial requirements** (e.g. to replace broken tools or machinery) place burdens on your financial resources? – Very frequently (1) … very rarely (5).	2.88	1.20	1.2%

Note: SD = standard deviation, SN = subjective norm, PBC = perceived behavioral control. Source: Own data.

The means of all normative beliefs are above three, indicating that the referent groups are slightly in favor of an enhancement of touristic activities. The means of the control beliefs are both below and above the mean scale point of three, implying that people feel a medium level of threat by the specific control beliefs. The sample is more divers in its answers towards control beliefs than towards normative beliefs. The amount of missing cases is small with 2 and 4 % in one variable each and 1.2 % for all the other variables.

All MIMIC constructs provided very good values for χ^2-difference, RMSEA, p close, CFI and model fit p-value according to the thresholds mentioned in Table 27. As a criterion for construct validity, Weiber & Mühlhaus (2014) recommend that the R^2 of the formative constructs should be ≥ .3.[358] With an R^2 of .76 SN satisfies this criterion, however both PBC and ATT only show an R^2 of .23. After incorporating the PBC MIMIC construct into the overall model, the R^2 rose due to a modification which will be explained later in the text (following Table 30).

Formative measurement models require that the indicators are tested for multicollinearity. Following recommendations of Weiber & Mühlhaus (2014), multicollinearity was tested using IBM SPSS Statistics 22.[359] The statistical analysis showed no signs of multicollinearity among the formative

[358] Cf.: Weiber & Mühlhaus 2014, p. 266.
[359] Cf.: Weiber & Mühlhaus 2014, pp. 262–264.

indicators of SN and PBC.[360] Whether or not to delete formative variables that show a non-significant influence on the construct is not only a statistical issue, but also a theoretical question: The deletion of an item changes the meaning and content of the latent construct. Any elimination of a variable must therefore be theoretically justifiable.[361]

Complete Model Integrated with MIMIC Constructs for SN and PBC[362]

An analysis with the covariance matrix[363] of the data suggested to regress PBC on snb3br ("My family thinks that I should not (1) ... I have to (5) enhance tourism supply in the next year."). Theoretically it is reasonable to assume that the opinion of the family does not only influence SN, but also has an influence on the perception of control over the action. Modeling this path increased the explained variance of PBC from .23 to .39 so that PBC now satisfies the criteria of a minimum of an R^2 of at least .3[364] and model fit improved as well. Figure 19 shows the estimated TPB model with the MIMIC constructs for SN and PBC and with the suggested regression of PBC on snb3br.

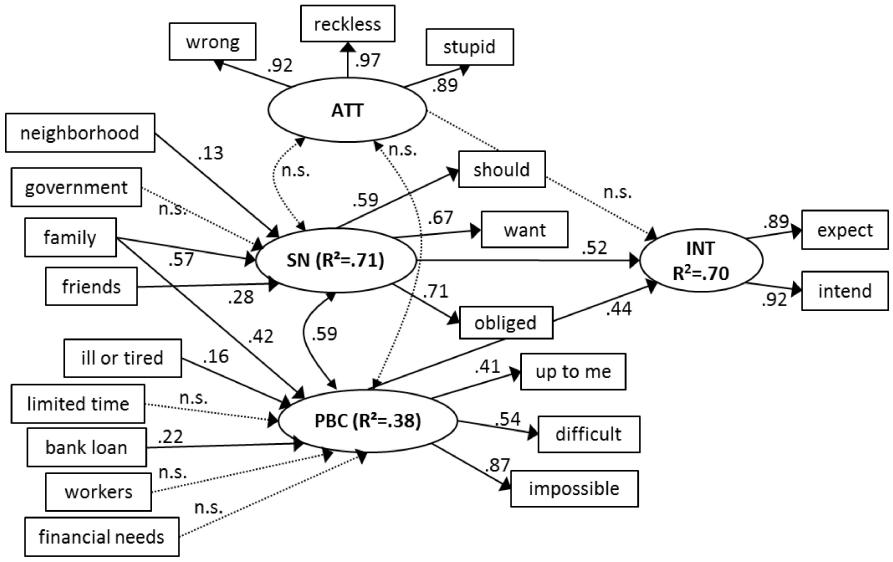


Figure 19: Estimated TPB model with MIMIC constructs for SN and PBC – integrated model

Note: Model fit: $\chi^2/df = 1.546$, p = .000, RMSEA = .047, p-close = .636, CFI = .964. All coefficients are standardized. For ease of visual representation, error terms and values of intercepts are not depicted. Significant correlations among formative indicators and with ATT were modeled but are also not depicted. All values are significant with at least $p < 0.05$, n.s. = not significant. INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control. Arrows mark regressions, double-headed arrows mark correlations. Rectangular boxes represent items, ellipses represent latent factors. Dotted lines mark insignificant paths. Source: Own calculations from own data.

[360] Since there are no formative indicators for ATT in the model, there were no indicators to be tested for multicollinearity.

[361] Cf.: Weiber & Mühlhaus 2014, pp. 264f.

[362] It is refrained from displaying a CFA with the MIMIC constructs since it does not seem appropriate with formative indicators. The influence of the formative indicators is not rightfully acknowledged in the CFA, causing a bad model fit and thus making useful conclusions unlikely. Moreover, the factors themselves have been confirmed in the initial CFA (see Chapter 5.4.1) and the MIMIC constructs individually provide good fit values as well.

[363] AMOS does not compute modification indices for incomplete data. Using a covariance matrix of the data renders results similar to the raw data and allows the computation of modification indices.

[364] Cf.: Weiber & Mühlhaus 2014, p. 266.

According to Diamantopoulos & Winklhofer (2001), overall model fit can be regarded as evidence for indicating that the indicators belong to the same index.[365] In the present case, model fit is better if the indicators with non-significant regression weights are kept in the model while deleting formative indicators with non-significant influences decreases model fit. Furthermore, the fact that these variables do not have a significant influence is of theoretical value because it shows which of the elicited beliefs have a significant influence in the overall sample. With respect to the TPB it is argued that if beliefs were mentioned in the elicitation study (see Chapter 3.2.6) by the respondents, they *are* components of that construct and should not be eliminated. The variables are therefore retained in the model. Generally, formative indicators of latent constructs are allowed to covary[366] among each other and with exogenous latent constructs.[367] Non-significant covariances between formative indicators and with ATT were removed.

Results of Integrated Model

With the exception of the model fit p-value, fit indices show acceptable or good fit. Just like in the simpler basic model without MIMIC constructs, ATT has no significant influence on INT while SN and PBC significantly influence INT. This means that the integrated model leads to the same conclusions regarding the acceptance and rejection of Hypothesis 1 through Hypothesis 3 which postulate that ATT, SN and PBC influence INT as the basic model. In contrast to the basic model, the model with MIMIC components shows no significant correlations between ATT and the other two explanatory constructs, but there are significant correlations between ATT and the significant beliefs of SN and PBC. Therefore, Hypothesis 4 is also considered to be confirmed. With an R^2 of .70 for INT, SN and PBC still explain a quite high amount of variance in INT, but now with different shares of contribution: While the influence of SN on INT decreases by .14, the influence of PBC on INT increases by .09 (see Table 29). This change in path coefficients could be caused by the formative indicators and the fact that one indicator influences both SN and PBC and it could also derive from different sample sizes of the basic and the integrated model due to missing values.

Table 29: Comparison of basic model and integrated model

	Basic Model	**Integrated Model**
SN → INT	.66	.52
PBC → INT	.35	.44
R^2 of INT	.74	.70

Note: INT = intention, SN = subjective norm, PBC = perceived behavioral control. Source: Own data.

The underlying belief-structure of the latent constructs can inform on what drives the formation of the latent constructs. In the application at hand, SN and PBC exert significant influences on INT. It is therefore interesting to see which beliefs have significant impacts on SN and PBC. These are namely family, friends and neighborhood (variables snb3br, snb4br and snb1br) in the case of SN and getting a loan and feeling ill or tired (variables pbcb3r and pbcb1r) in the case of PBC. The following table shows the formative indicators and their respective standardized weights.

[365] Cf.: Diamantopoulos & Winklhofer 2001, p. 272.
[366] Cf.: Weiber & Mühlhaus 2014, p. 257.
[367] Cf.: Jarvis, MacKenzie & Podsakoff 2003, p. 215.

Table 30: Standardized regression weights and p-values for formative indicators

Variable Name	Item Wording		Con-struct	Standardized Regression Weights	S.E.	P
snb1br	Other people in my **neighborhood** would not (1) … would (5) enhance tourism supply in the next year.	→	SN	.132	.029	.019
snb2br	The **government** allows me to enhance tourism supply in the next year … strongly disagree (1) - strongly agree (5).	→	SN	.022	.029	.664
snb3br	My **family** thinks that I should not (1) … I have to (5) enhance tourism supply in the next year.	→	SN	.569	.043	***
snb4br	My **friends** would not (1) … would (5) approve of me enhancing tourism supply in the next year.	→	SN	.283	.039	***
pbcb1r	How often do you feel **ill or tired**? – Very frequently (1) … very rarely (5).	→	PBC	.160	.021	.017
pbcb2r	How often do you encounter **unanticipated events** that decrease your time budget? – Very frequently (1) … very rarely (5).	→	PBC	-.078	.025	.215
pbcb3r	How likely is it for you to **get a loan** from a bank? – Very unlikely (1) … very likely (5).	→	PBC	.219	.022	.001
pbcb4r	How likely is it for you to **find workers** you can hire? – Very unlikely (1) … very likely (5).	→	PBC	.076	.021	.237
pbcb5r	How often do **unanticipated financial requirements** (e.g. to replace broken tools or machinery) place burdens on your financial resources? – Very frequently (1) … very rarely (5).	→	PBC	.090	.023	.144
snb3br	My **family** thinks that I should not (1) … I have to (5) enhance tourism supply in the next year.	→	PBC	.417	.035	***

Note: S.E. = Standard error, *** p < 0.001. Source: Own data.

In the case of SN, the strongest influence comes from what the family thinks the respondent should do while the strength of the influence from friends and people in the neighborhood is very similar. What the government allows, on the other hand, does not show a significant influence on households' intentions to enhance the tourism supply. Two of the five control beliefs show a significant influence on PBC with a slightly larger influence from getting a loan than from feeling ill or tired. The influences from unanticipated events or financial requirements and finding workers to hire remain non-significant in the model. There is, however, a significant and comparatively large influence from what the family approves of (snb3br) on PBC. Hypothesis 7.1 through Hypothesis 7.14 postulate that behavioral, normative and control beliefs influence the respective constructs. Since ATT did not show a significant influence in the basic model to begin with, no additional gain could be achieved by incorporating formative indicators for this construct.[368] This hypothesis can be upheld

[368] Although a separate analysis of the measurement model for ATT with formative indicators provided very good model fit. However, within the model as a whole, the addition of formative ATT indicators only lead to a

partly due to the significant formative indicators for SN and PBC, but not all proposed formative indicators significantly influence the latent constructs.

In addition to the advantage of rendering insights into the underlying belief structure, using formative as well as reflective measures for the explanatory latent constructs offers the opportunity of testing their validity by correlating them.[369] Bivariate correlations (for a table of the correlations between all direct and indirect indicators of SN and PBC see Appendix A 6) between the direct and indirect indicators for SN show that snb3br and snb4br significantly correlate with all direct measures, presenting correlation coefficients between .425 and .562. The correlations of snb1br with direct measures range from .318 to .366 and snb2br fails to show significant correlations in two of the three cases. This corroborates the finding that snb2br does not exert a significant effect on the SN-construct. In the case of the PBC construct the picture is more diverse. Variables pbcb3r and pbcb4r show significant correlations with all direct measures of PBC between .127 and .339. However, according to the SEM, pbcb4r does not have a significant impact on PBC. On the other hand, pbcb1r and pbcb2r show significant influences on PBC in the SEM (see Table 30), but not all correlations with the direct measures are significant. All correlations of snb3br with direct PBC measures were significant but lower than the correlations of that item with direct SN measures, corroborating that this item does have an association with PBC as well, but is more strongly connected to SN.

5.4.3 Bootstrap of Model Parameters

Since the variables in the model are not normally distributed results could be biased. The Bollen-Stine bootstrap and bootstrapped p-values of the estimates give an indication of biased results and therefore provide a robustness check of the results. In order to be able to calculate bootstrap samples, data was imputed using the regression imputation method in AMOS.

For the basic model, the Bollen-Stine bootstrap p-value is .201 (1000 bootstrap samples), indicating good model fit. The bootstrapped p-values of the regression coefficients are all significant except for the regression of INT on ATT (p = .085) which was also non-significant without bootstrapping. Both correlations and R^2 are significant as was attested before. With the sole exception of the error term of the variable pbcd4br which has a bootstrapped p-value of .054 (compared to a p-value of .023 in the non-bootstrap solution), all other values are significant, thereby generally confirming the findings calculated with the raw data.

The Bollen-Stine bootstrap for the integrated model is .017 (1000 bootstrap samples), thus leading to the same conclusion as the model without bootstrapping. The regression coefficient of the belief snb1br has a bootstrapped p-value of .061, indicating non-significance of this item and a different outcome than for the model calculated with the raw data. The p-values of the other regression weights imply the same conclusions as presented before for the model without bootstrapping. The same is true for all tested correlations and as is the case for the basic model, variances and R^2 all remain significant.

decline in model fit since the construct itself already does not explain variance in INT. For the sake of parsimony, it is also desirable to not to include further variables.

[369] Cf.: Francis, Eccles, Johnston et al. 2004, p. 30. For a more general recommendation of correlating formative indicators with a global item that represents the core of the latent construct to establish external validity see Diamantopoulos & Winklhofer 2001, p. 272.

The bootstrapped p-values only lead to very slight changes in interpretation. For the basic model, the variance of one error term is no longer significant and in the case of the integrated model the regression weight of one belief is non-significant for bootstrapped samples. However, in both cases these values were already not highly significant before and their p-values rose just slightly above the threshold of .05. With regard to structural coefficients, no changes in significance could be observed.

5.4.4 Moderation Effect of Perceived Behavioral Control

Although the PBC component is often regarded as an explanatory construct just like ATT and SN, PBC has also been successfully modelled as a moderator (see e.g. Dillard 2011), influencing the effect ATT and SN have on INT. Following suggestions of Yzer (2007)[370] and Fishbein & Ajzen (2010)[371], PBC is regarded as an influential factor so to say, that determines in which way ATT and SN exert their influence on INT. Figure 20 gives a visual representation of the moderating effect of PBC.

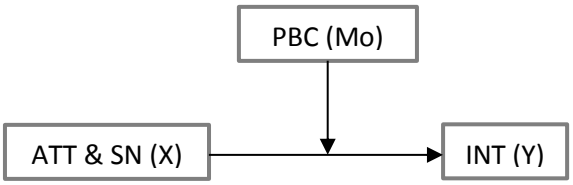


Figure 20: Moderation of PBC on the effect of ATT and SN on INT

Note: X = Independent variable, Y = dependent variable, Mo = moderating variable, PBC = perceived behavioral control, ATT = attitude, SN = subjective norm, INT = intention. Source: Own presentation.

A moderator effect is present when a third variable Mo separates the independent variable X into subgroups which may have effects of differing magnitude on the dependent variable Y.[372] Methodologically, this can be tested by separating the sample into two groups, i.e. households low in PBC and households high in PBC, and then comparing the same model for both groups.[373] The idea is to leave out PBC as a separate component in the model and to rather see PBC as a moderating factor that influences the relations of ATT and SN on INT. In order to so, the model is compared with regard to the structural paths of ATT on INT and SN on INT for two groups of households, namely those low and those high in PBC.

In order to compare models across groups, certain preconditions must be met. All of these preconditions deal with invariance (i.e. attributes have to be the same for all groups), but regarding different aspects. In the case of applied research, three kinds of invariance are important. These are configural, metric and scalar invariance.[374] First of all, configural invariance must be met. This kind of invariance refers to the basic structure of the model with its factor loadings. Since it is theoretically supposed that the exact same model will hold for both groups and no differences in model

[370] Cf.: Yzer 2007, p. 113.
[371] Cf.: Fishbein & Ajzen 2010, pp. 201–203.
[372] Cf.: Baron & Kenny 1986, p. 1173.
[373] There are basically two possibilities for testing a moderator effect. The other one is to create product terms of the variables that are suspected to interact (in this case it would mean multiplying ATT by PBC and SN by PBC) and adding these product terms to the model. This has the disadvantage of creating redundancies regarding ATT and SN. It was therefore decided to test the moderation via group comparison.
[374] Cf.: Davidov, Cieciuch, Meuleman et al. 2015, p. 248.

specifications are made, configural invariance can be assumed because the basic model fit statistics for the unconstrained model testify that the model fits the empirical data reasonably well.[375]

For the other steps of invariance, constraints are subsequently added to the model and the change in model fit is observed. The first constraints deal with metric invariance and refer to factor loadings. The size of the factor loadings should be equal for each indicator across all groups. So if all factor loadings are constrained to be equal across groups and this model does not show a significantly worse model fit than the unconstrained model, metric invariance is present. Metric invariance allows the comparison of structural relationships between groups.[376] Given that the model shows metric invariance, scalar invariance can be tested. Scalar invariance refers to the intercepts of the indicators and demands them to be of equal size. That basically means that the starting levels of the items are equivalent across groups.[377] In addition to comparing structural relationships, scalar invariance gives the possibility to also compare latent means across groups.[378]

Definition of Groups

Since AMOS does not render factor scores, SPSS was used to calculate an overall score for the PBC construct. Exploratory factor analysis was used to create factor score weights[379], but the resulting variable does not have an interpretable scale. Therefore, an additive sum score was computed using the three indicators for PBC. The values of the three variables were summed and then divided by three. The resulting variable has the advantage of having the same scale as the single PBC indicators (1 – low to 5 – high) and can therefore be interpreted easily in terms of low and high PBC. The additive sum score has a significant correlation with the factor score variable from the EFA of .957, indicating that both variables are very similar. The additive sum score was used to split the sample in two groups: one group with low perceived control (values 1 and 2, n=137) and one group with high perceived control (values 4 and 5, n=78). Households with the value 3 (n=29) were excluded from the analysis since they cannot be counted to either one of these groups.

CFA for the Determination of Invariance

The model follows the basic structure of the model presented in Chapter 5.4.2. Since the model including the beliefs offers the additional advantage of being able to analyze which aspects are important for the composition of the latent construct than others, the model including the MIMIC (multiple indicators and multiple causes) construct for SN was chosen. PBC was excluded altogether because its role is incorporated into the analysis by the two groups. The reduced model (i.e. without PBC) will be compared for households with low PBC and households with high PBC.

Multiple group comparisons in AMOS require full data sets. Missing values were imputed using the regression data imputation technique provided by AMOS. Missing values were below 5 % except for three of the variables, namely atd10br (13 %), atd11br (9.7 %) and atd12br (8.1 %).

[375] Cf.: Weiber & Mühlhaus 2014, pp. 308f.
[376] Cf.: Weiber & Mühlhaus 2014, pp. 299f.
[377] Cf.: Sideridis, Tsaousis & Al-harbi 2015, p. 570.
[378] Cf.: Weiber & Mühlhaus 2014, pp. 300f.
[379] The procedure used was an EFA with principal axis and oblimin rotation.

Following the explications of Weiber & Mühlhaus (2014)[380], a confirmatory factor analysis was carried out in order to determine invariance. All latent constructs were correlated and the loadings of the reference indicators were set free to be able to test for metric and scalar invariance. In order to achieve identifiability, the variances of all latent constructs were set to one and their means to zero. The following table shows the model fit values for the models calculated in the process of testing for metric and scalar invariance with a CFA.

Table 31: CFA model fit values for unconstrained, measurement weights, measurement intercepts and measurement + formative weights models

Model	χ^2/df	Δ χ^2/df	CFI	Δ CFI	RMSEA	Δ RMSEA	SRMR	Δ SRMR
Unconstrained	2.321		.919		.079		.1472	
Measurement Weights	2.184	-0.137	.920	-0.001	.075	0.004	.1487	-0.0015
Measurement Intercepts	2.529	0.345	.889	0.031	.085	-0.01	.1445	0.0042
Measurement + Formative Weights (Intercepts are free)*	2.196	0.012	.916	0.004	.075	0	.1482	0.0005

Note: Δ = change, * Δ in comparison to measurement weights, df = degrees of freedom, CFI = comparative fit index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual. Source: Own data.

The unconstrained and the measurement weights model (constrains all factor loadings to be equal across groups) altogether show satisfactory fit. χ^2 difference and RMSEA are acceptable, according to van de Schoot, Lugtig & Hox (2012) CFI values larger than .90 are adequate[381]. Only SRMR fails to show satisfactory values that remain below (or equal to) the threshold of .10 for acceptable fit. For sample sizes smaller than or equal to 300, Chen (2007) suggests a CFI-change should have a maximum of .005, an RMSEA-change a maximum of .01 and an SRMR-change a maximum of .025 for loadings and of .005 for intercepts to be able to determine invariance.[382] All of these recommendations are met for the comparison of the measurement weights model with the unconstrained model, indicating metric invariance. However, in case of the measurement intercepts model, the change in CFI is higher than recommended, RMSEA-change touches upon the threshold and also the change in χ^2 difference is comparatively high. The nested model comparison confirms that the χ^2 value for the measurement intercepts model is significantly worse than for the measurement weights model. Since the modification indices do not give any indication of which intercepts cause the variance, it is not possible to achieve partial scalar invariance by freeing the responsible constraints. The change in SRMR is not substantial according to Chen's recommendations in any of the model comparisons.

The analysis of the CFA of the model for the group comparison has shown that metric invariance is given since introducing constraints regarding equal loadings across groups does not lead to a significantly worse model fit. This allows the comparison of structural relationships between the latent constructs in the next step. The assumption of scalar invariance has to be dismissed since the introduction of intercept constraints caused model fit to deteriorate significantly when compared with the measurement weights model.

[380] Cf.: Weiber & Mühlhaus 2014, pp. 305–311.
[381] Cf.: van de Schoot, Lugtig & Hox 2012, p. 487.
[382] Cf.: Chen 2007, p. 501.

Furthermore, the formative indicators for the SN construct are regarded. A new model was created which included the constraints regarding the factor loadings and additionally constrained the weights of the formative indicators onto the latent construct to be equal across groups (intercepts were not constrained since the analysis had already shown that they were not equal). This new model was named "Measurement + Formative Weights" and tested against the measurement weights model: Δ-values in Table 31 for this model refer to a comparison with the Measurement Weights Model. None of the values indicate a violation of invariance for the newly created model. It can be assumed, that the weights of the formative indicators are equal across groups.

Full SEM (with MIMIC Component in SN)

Now that metric invariance is confirmed, the causal structural paths for both groups can be compared. For this, the model is changed back into the full structural equation model with directional paths from ATT and SN towards INT. First of all, the correlations of ATT and SN with INT are deleted. The next step is to delete the "1" in the variance of INT for all groups and then to add an error term. To achieve identifiability, a reference indicator for the endogenous construct is constrained to one for both groups. Now the directional paths leading from ATT and SN to INT can be modeled.[383]

Since only metric invariance could be confirmed, the measurement and formative weights model (factor loadings and weights of formative indicators are constrained to be equal across groups) will be the one that is used for the interpretation of results. The model with standardized coefficients and model fit values is presented in Figure 21.

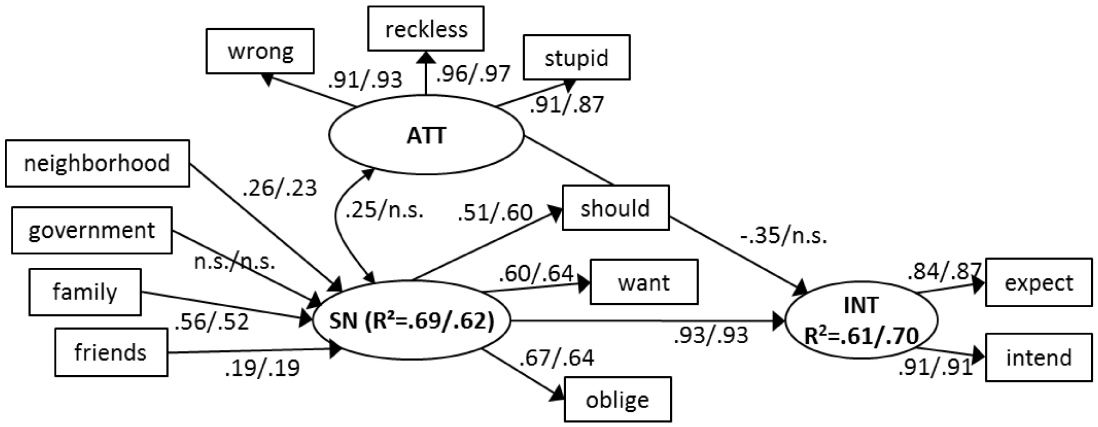


Figure 21: Model for group comparison with constraints on measurement weights and formative weights

Note: Model fit: $\chi^2/df = 1.553$, p = .000, RMSEA = .051, p-close = .443, CFI = .962. All coefficients are standardized. Values: Left = low PBC / right = high PBC. For ease of visual representation, error terms and values of intercepts are not depicted. Significant correlations among formative indicators and with ATT were modeled but are also not depicted. Equal factor loadings and equal formative weights, intercepts are free. All values are significant with at least $p < 0.05$, n.s. = not significant. INT = intention, ATT = attitude, SN = subjective norm. Arrows mark regressions, double-headed arrows mark correlations. Rectangular boxes represent items, ellipses represent latent factors. Source: Own calculations from own data.

All model fit values are very good and the path coefficients show some differences. In order to determine whether these differences are significant, the pairwise parameter comparisons for the

[383] Cf.: Weiber & Mühlhaus 2014, pp. 311–314.

respective coefficients are regarded. The critical ratios for the differences between parameters take on values that are higher than 1.96 if the difference of parameters between groups are significant.[384] Table 32 shows the values of the critical ratios for the three structural relationships and their interpretation.

Table 32: Pairwise parameter comparisons of structural paths

Relationship	Critical Ratio		Cut-Off	Interpretation
ATT → INT	1.037	<	1.96	The regression weight does not differ significantly across groups.
SN → INT	.026	<	1.96	The regression weight does not differ significantly across groups.
ATT ↔ SN	-.41	<	1.96	The correlation does not differ significantly across groups.

Note: INT = intention, ATT = attitude, SN = subjective norm. Source: Own data.

The critical ratio for the comparison of the regression coefficient of ATT on INT for both groups is below 1.96, as is the critical ratio for the comparison of the regression coefficient of SN on INT for both groups, indicating that neither of the two relationships differs significantly between households low and high in PBC. The same can be said about the correlational relationship between ATT and SN, this relationship also shows no significant difference across groups. Therefore, Hypothesis 8 that PBC moderates the influence of ATT and SN on INT is rejected. However, some issues may prevent the detection of a moderation effect (see Chapter 5.4.6, p. 127 and Chapter 6.3.3 for a discussion of these concerns).

5.4.5 Integration of Background Variable

Structural equation models allow the straightforward analysis of mediation in the overall model. A mediator is a variable of a causal chain, as can be seen in Figure 22.[385]

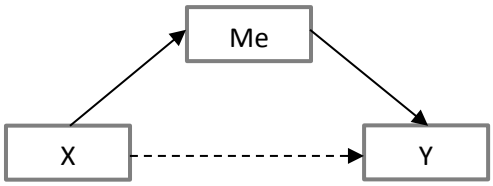


Figure 22: Mediation

Note: X = Independent variable, Y = dependent variable, Me = mediating variable. Source: Modified from Baron & Kenny (1986, p. 1176).

X has a direct effect on Y, but X also has a mediated effect on Y via Me; Me is a mediator. Mediator variables are always endogenous and convey an indirect effect of an independent variable onto a dependent variable.[386] In this, the function of mediator variables switches from effect to cause.[387] It is possible that in addition to the mediated, indirect effect, the independent variable has a unique effect on the dependent variable, but this does not have to be the case (as is indicated by the dotted

[384] Cf.: Weiber & Mühlhaus 2014, p. 316.
[385] Cf.: Kline 2011, pp. 105f.
[386] Cf.: Kline 2011, pp. 105f.
[387] Cf.: Baron & Kenny 1986, p. 1173.

line between X and Y).[388] If the size of the effect of X on Y significantly decreases by adding a mediating variable, it is obvious that at least part of the observed effect is mediated by Me.[389] It is also possible that there is no true relationship between X and Y after controlling for Me if Me influences both X and Y, but in this case Me would not be a mediator and rather simulate an effect of X on Y.[390] The standardized indirect effect of X on Y via Me can be computed by multiplying the two standardized direct effects of X on Me and Me on Y.[391]

In 1986, Baron & Kenny suggested estimating three separate regression equations for testing mediation effects. Me is to be regressed on X, Y is to be regressed on X and Y is to be regressed on both X and Me. If there is a mediation effect between the variables, equations one and two must show significant effects and equation three must show an effect of Me on Y. Furthermore, comparing equations two and three, the effect of X on Y must be smaller in the last equation.[392] The advance of SEM techniques allows estimating indirect effects without the detour of calculating several regression analyses and testing significance of modeled paths is straightforward. [393] Even more importantly, SEMs enable the researcher to examine structures in which several items are used to measure one construct. The classic approach by Baron & Kenny (1986) can handle scales that are e.g. computed as an average of items used to measure a construct, but as soon as multiple items shall be modeled as separate indicators, SEM techniques are the method of choice.[394]

The hypotheses on the mediated influence from the background variable experience were introduced in Chapter 4.1. The data shows that almost 58 % of the households in the sample do not offer any touristic services while the remaining 42 % offer between one and five different kinds of services (see Chapter 5.3.5, Table 18 in particular). It is assumed that the experiences that households have already made regarding the tourism industry influence the beliefs that underlie the latent constructs in the TPB and that these experiences are generally positive because if they were negative, households would probably have stopped their activities. Since the analysis has already shown that the ATT construct does not exert a significant influence on INT it is hypothesized that there is no mediated influence via ATT, rendering Hypothesis 9 (on behavioral beliefs of ATT) and Hypothesis 10 (on ATT) obsolete. These two hypotheses are replaced by a hypothesis stating that experience is not expected to have a mediated effect on INT via ATT.

Hypothesis 27 Experience has no indirect effect on intention which is mediated through attitude.

The analysis has revealed that some of the beliefs included in the questionnaire do not have a significant impact on the constructs. These beliefs seem to have no empirical connection with the constructs[395] and therefore do not contribute to the formation of the constructs. In this case, there is no reason to assume that a background variable or factor influences this belief. Therefore, the

[388] Cf.: Kline 2011, pp. 105f.
[389] Cf.: Baron & Kenny 1986, p. 1176.
[390] Cf.: Kühnel & Krebs 2006, pp. 473–476.
[391] Cf.: Arbuckle 2011, p. 426.
[392] Cf.: Baron & Kenny 1986, p. 1177.
[393] Cf.: Little, Card, Bovaird et al. 2007, p. 226.
[394] Cf.: Iacobucci, Saldanha & Deng 2007, pp. 144f.
[395] It is possible that some of the beliefs have small effects on the constructs which fail to be significant due to the small sample size. However, these effects cannot be large because if they were, they would be significant.

background variable is presumed to influence significant beliefs only. The following figure was already presented in Chapter 4.1.3 and summarizes all of the effects of the background variable within the model, but this figure acknowledges Hypothesis 27 as well.

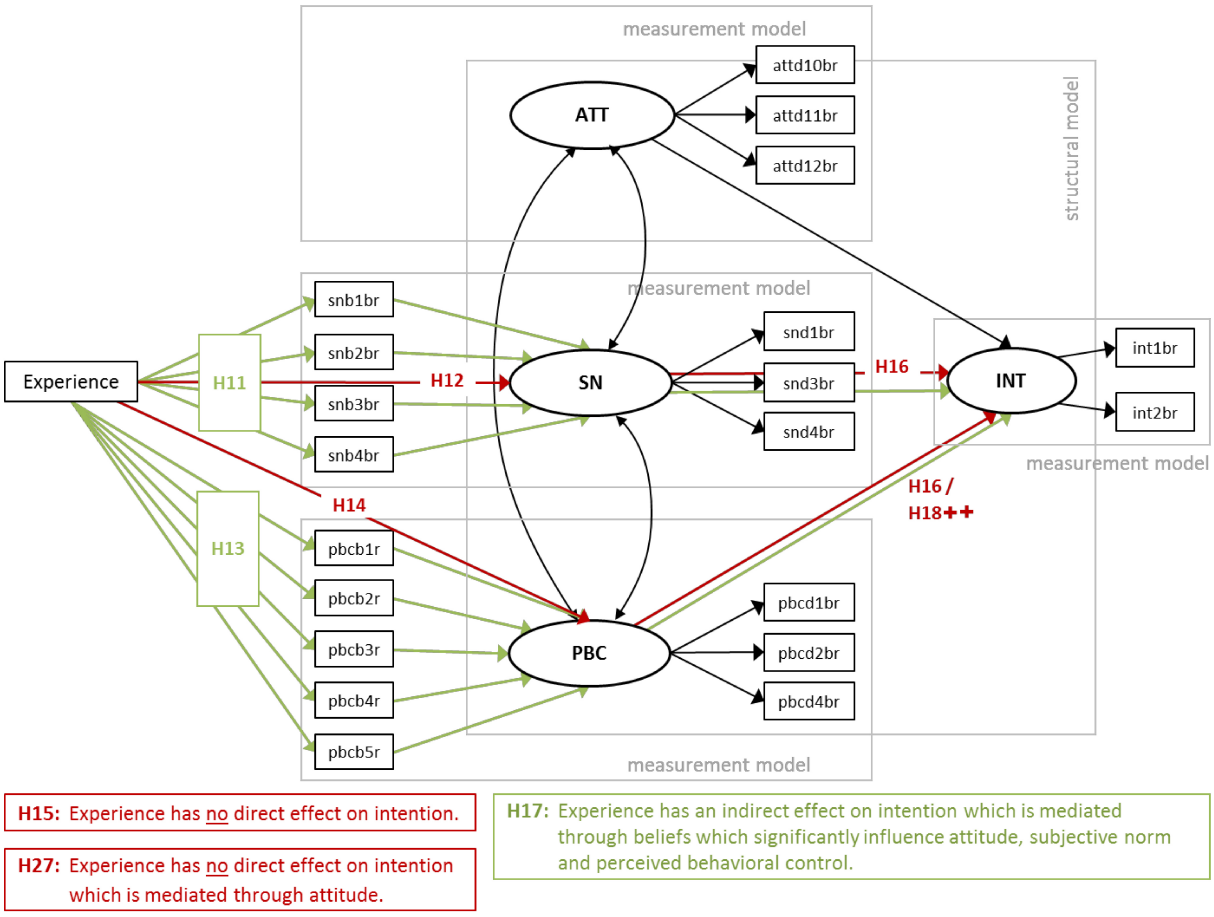


Figure 23: Adapted visual representation of hypotheses on background variable

Note: INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control, H = hypothesis. Arrows mark regressions, double-headed arrows mark correlations. All formative indicators are allowed to correlate with one another but for ease of visual representation these double-headed arrows are not depicted. Rectangular boxes represent items, ellipses represent latent factors. Objects marked in red and green refer to hypotheses. Source: Own illustration.

To be able to test the significance of indirect effects, bootstrap samples are used. As the indirect effect is usually non-normal, confidence limits are imbalanced. Bootstrap samples have the advantage of providing more accurate confidence limits and show the most statistical power.[396] Particularly the procedure available in AMOS was found to provide reliable inferences.[397] Since bootstrapping requires a full data set, missing values were imputed in AMOS using the regression imputation technique. Bootstrap samples (n = 2000) are then used to calculate confidence intervals

[396] Cf.: Mackinnon, Lockwood & Williams 2004, pp. 99 and 117.
[397] Cf.: Arbuckle 2011, p. 431.

and p-values for direct, indirect and total effects. Overall model fit after the inclusion of the variable experience[398] was good (χ^2/df = 1.532, model fit p = 0, RMSEA = .046, p close = .672, CFI = .967).

Hypothesis 11 and Hypothesis 13 in Chapter 4.1 are directed at the underlying beliefs of SN and PBC, i.e. normative beliefs and control beliefs respectively. The effects of experience on the normative beliefs snb1br and snb3br are significant with values of .132 and .236 respectively while the effect on snb2br is non-significant. However, the effect on snb4br is not significant (p = .066) as well. This partially confirms Hypothesis 11: The effect of experience is non-significant for the non-significant item snb2br and it is significant on two of the significant formative indicators, but the hypothesis cannot be confirmed with regard to item snb4br. Hypothesis 13 has to be rejected since experience has no significant effect on any of the control beliefs for PBC. In the next step, all non-significant direct effects of experience on beliefs were eliminated from the model to make it more parsimonious. The output revealed that without the non-significant paths, other paths had become non-significant (namely experience on snb1br and on ATT). Removing the effect on snb1br did not change the significance of the influence of experience on snb3br ("family"), leaving this variable as the only belief that is significantly influenced by the background factor.

After removing the non-significant effects of experience on normative and control beliefs, Hypothesis 12 and Hypothesis 14 were tested. They postulate significant direct effects of experience on SN and PBC respectively. Two-tailed significance of the bias-corrected bootstrap samples shows that both effects are significant at p < .005 and the standardized effect sizes are similar with .233 for SN and .195 for PBC. The directionality of the effects is as it was hypothesized. Experience shows no significant effect on ATT. This confirms Hypothesis 27 which was added earlier in this chapter because mediation via ATT is not possible if the effect of experience on ATT is insignificant.

As it is postulated by the TPB, the background variable has no direct effect on INT. A direct path was modeled from experience to INT and was tested to be non-significant (b = .086, bootstrapped p = .186), confirming Hypothesis 15.

Since ATT was ruled out, indirect effects on INT are possible via the constructs SN and PBC. A special case presents variable snb3br ("family") which is also significantly influenced by experience. A model that only contained these significant paths emanating from experience was used to take a closer look on the indirect mediated effects from experience on INT mediated by SN, PBC and snb3br. Model fit is good (χ^2/df = 1.535, model fit p = 0, RMSEA = .047, p close = .671, CFI = .964) and gives no indication that results could not be trusted.[399] This model provides evidence for a significant indirect effect of experience on INT mediated by snb3br ("family"), SN and PBC. Further models were calculated that only contained one path emanating from experience to each of the respective mentioned mediators to assess the amount of mediation via each mediator. Model fit indices of these models were a little worse, indicating that the omitted paths are generally valuable (χ^2/df between 1.6-1.7, model fit p = 0, RMSEA between 0.5-0.54, p close between .284-.464, CFI between .952-.958). The results of the differential analysis of indirect effects can be seen in Table 33.

[398] Experience was modeled to have an effect on all beliefs and constructs in the first step to enable stepwise testing of the proposed relationships.
[399] For a discussion of the significant model fit p-value see Chapter 6.3.5.

Table 33: Indirect effects of the variable experience on INT and direct effects of experience on the mediators

	Standardized indirect effects of experience on INT (separate models)	Bootstrapped p-values	Stand. direct effects of experience on mediator (all effects included in model)	Bootstrapped p-values
Mediation via **"family"**	.057	.027	.112	.048
Mediation via **SN**	.133	.006	.258	.001
Mediation via **PBC**	.081	.049	.215	.001
Total indirect effect (all effects included)	.282	.002	-	-

Note: INT = intention, SN = subjective norm, PBC = perceived behavioral control, stand. = standardized. Source: Own data.

All effects are significant. Of the three mediational effects that compose the total indirect effect, mediation of experience on INT via SN is the strongest with a standardized effect of .133 and experience also exerts its strongest direct effect on SN. Altogether, the total indirect effect of experience on INT amounts to .28. The differential analysis of mediational effects confirms Hypothesis 16 with the exception of ATT. Given that of the five normative and control beliefs with significant influences on SN and PBC only one belief serves as a mediator for the influence of experience, Hypothesis 17 is considered to be rejected. The standardized indirect effect with a path emanating to SN is larger than the equivalent effect for PBC, thus leading to the rejection of Hypothesis 18 that the mediated effect via PBC is significantly larger than that mediated via SN. The complete model with the standardized influences of the background variable experience can be seen in Figure 24.

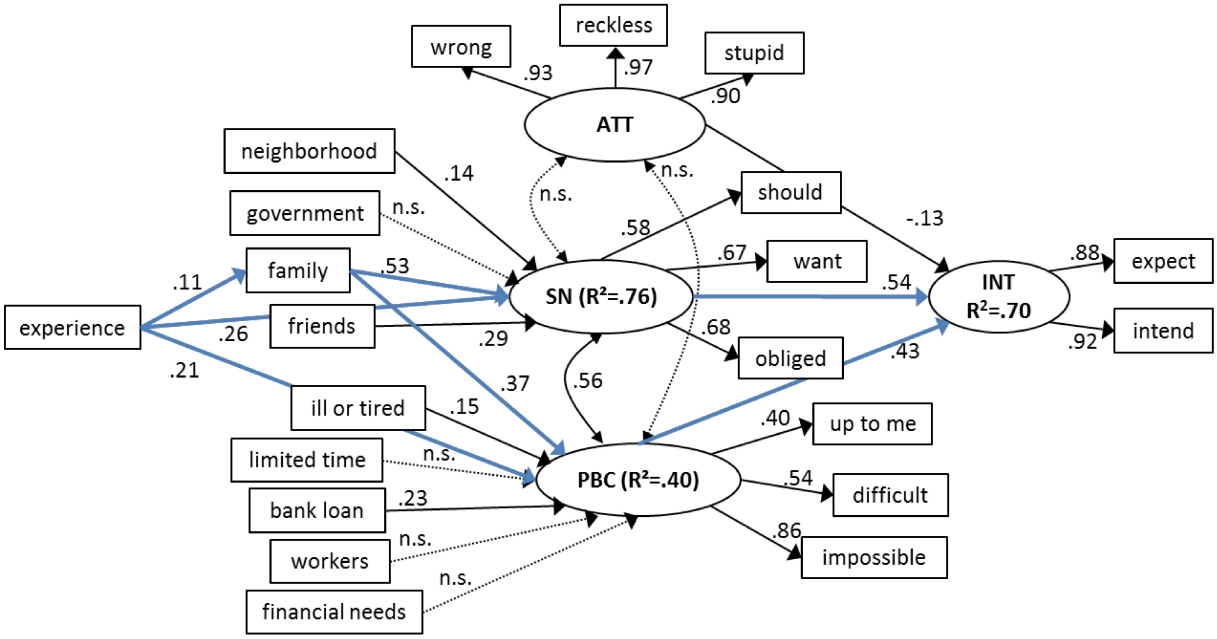


Figure 24: Model with the mediation of background variable experience on INT via SN, PBC and snb3br

Note: Model fit: $\chi^2/df = 1.535$, $p = .000$, RMSEA = .047, p-close = .671, and CFI = .964. All coefficients are standardized. For ease of visual representation, error terms and values of intercepts are not depicted. Significant correlations among formative indicators and with ATT were modeled but are also not depicted. Blue arrows mark the mediated paths. All values are significant with at least $p < 0.05$, n.s. = not significant. INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control, BV = background variable. Arrows mark regressions, double-headed arrows mark correlations. Rectangular boxes represent items, ellipses represent latent factors. Dotted lines mark insignificant paths. Source: Own calculations from own data.

The amount of explained variance in INT is still at .70 as was the case for the integrated model (cf. Figure 19). A change of explained variance is not to be expected since experience is not an additional explanatory factor which was also empirically proven by the confirmation of Hypothesis 15 that postulated that experience does not have a direct effect on INT. Experience can rather provide insight into what influences the latent explanatory constructs.

Unlike the basic and the integrated model, this model shows a significant influence from attitude to intention. Surprisingly, this effect is negative (-.13) whereas the underlying hypothesis proposed that the more positive, the higher the intention would be. However, looking at zero-order correlations from the confirmatory factor analysis, it shows that attitude and intention are positively correlated. This shift in the algebraic sign from positive to negative could arise from multicollinearity among the three explanatory constructs and hint at a suppression effect (see Chapter 6.3.4 for a discussion of this result).[400]

[400] Cf.: Kraha, Turner, Nimon et al. 2012, p. 8; Darlington 1968, p. 179.

5.4.6 Results

Overall Model

Two general models were estimated before turning to modifications of the core model: the basic model and the integrated model with MIMIC-constructs (multiple indicators and multiple causes). Figure 25 shows the standardized structural coefficients and R^2's for both these models. Four of the six structural relationships are roughly the same for both models and also R^2 is much alike. As it was hypothesized (see Chapter 4.1), the construct SN has a significant positive effect on INT and so does the construct PBC. Although the size of the effect shifts, both models testify that SN has the strongest effect on INT. The hypothesis that ATT has a positive effect on INT could not be confirmed; this relationship remained insignificant throughout the analyses. Both models show a significant positive correlation of SN and PBC and the basic model further corroborates the hypothesized correlations between ATT and SN and ATT and PBC. These last two correlations could not be confirmed for the integrated model, however, due to the formative indicators used to explain SN and PBC within this model, the full model contains significant correlations between the formative indicators that are also linked to ATT and show that there are in fact significant relationships between all exogenous constructs.

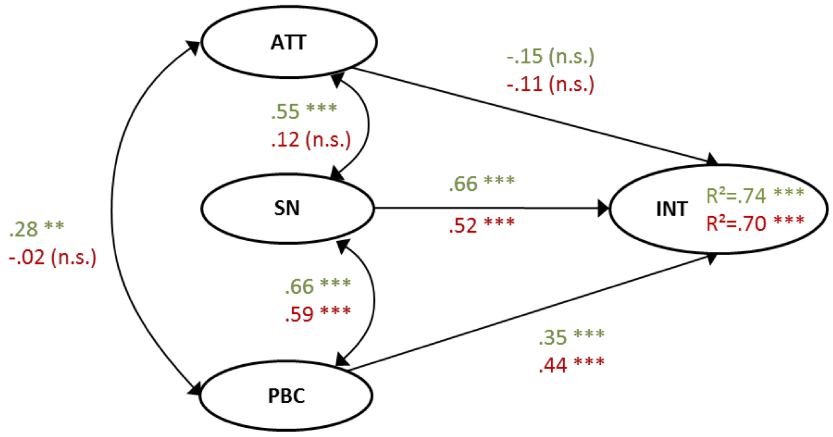


Figure 25: TPB model with standardized effects of structural relationships and explained variance

Note: Values in green = standardized coefficients for basic model, values in red = standardized coefficients for integrated model with MIMIC-constructs. INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control, n.s. = not significant. ** $p < 0.05$, *** $p < 0.01$. Arrows mark regressions, double-headed arrows mark correlations. Source: Own illustration.

During the process of constructing the model in the way that it was presented in this chapter, empirical implications of results of various statistical procedures (i.e. mostly EFAs, CFAs and modification indices) were taken into account. It has to be noted that this approach of modifying the initial model is not strictly confirmatory, but has an exploratory notion and can be considered to be model generating.[401] Yet it is deemed important to take the empirical implications of the given data structure into account since the overall objective is to obtain a model that reproduces the sentiments of the sample population. Except for the significant p-value in the case of the integrated model, the model fit indices generally show that the empirical data fits the theoretical structure of the model well. P-values can be biased if distributional assumptions are not met and have low power in the

[401] Cf.: Jöreskog 1993, p. 295; Weiber & Mühlhaus 2014, p. 242.

structural equation framework because the reject-support mechanism is reversed.[402] For this reason, it is common to not only rely on the p-value but to make a decision for or against a model by looking at several model fit values, as was done in this case.

Although the assumption of multivariate normal distribution has been violated, results from bootstrapping the basic model and the integrated model indicate no problems.

Comparison of CFA and SEM

Comparing the CFA results (i.e. the correlations between all latent constructs) and the results of the causal model according to the Theory of Planned Behavior (TPB) (i.e. its path coefficients), one can see that the formerly significant correlation of ATT and INT turns into a non-significant effect of ATT on INT (see Table 34). It is possible that the path analytic approach reveals a correlation to be spurious, while the non-spurious and therefore significant causal relations are between SN and INT and PBC and INT.[403] Fishbein & Ajzen (2010), on the other hand, argue that when the predictors ATT, SN and PBC are correlated it may still be the case that the non-significant component in the structural equation model (SEM) is an important determinant for INT.[404] Since the CFA showed that the construct ATT correlates significantly with INT and also with SN and PBC, the influence of ATT on INT is possibly redundant since it explains the same part of variance in INT that is already explained by SN and / or PBC. Although values differ slightly for the basic and the integrated model, their overall directions remain the same and there is no substantial change in the size of coefficients.

Table 34: Correlations and standardized regression coefficients of basic and integrated model

	Basic Model				Integrated Model			
	Correlations	**p**	**Regression Weights**	**p**	**Correlations**	**p**	**Regression Weights**	**p**
ATT & INT	0.31	***	-0.15	0.053	0.30	***	-0.11	0.110
SN & INT	0.80	***	0.66	***	0.80	***	0.52	***
PBC & INT	0.74	***	0.35	***	0.70	***	0.44	***
ATT & SN	0.55	***			0.38	***		
ATT & PBC	0.28	0.001			0.20	0.015		
SN & PBC	0.66	***			0.70	***		

Note: *** $p < 0.001$, INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control. Source: Own data.

The non-significance of the regression coefficient from ATT to INT and the shift in the algebraic sign from positive to negative could also arise from multicollinearity among the three explanatory constructs ATT, SN and PBC. However, comparing the correlations of the estimated regression coefficients between the three constructs on INT with one another, the values give no indication for multicollinearity (see Table 35). Correlations of estimates below .9 are not associated with multicollinearity (for further discussion of a possible suppression of the influence from ATT on INT see Chapter 6.3.4).

[402] Cf.: Kline 2011, pp. 193–195.
[403] Cf.: Kline 1998, p. 53.
[404] Cf.: Fishbein & Ajzen 2010, p. 192.

Table 35: Correlations of regression coefficients of the latent constructs

	Basic Model	Integrated Model
ATT → INT & SN → INT	-0.633	-0.568
ATT → INT & PBC → INT	0.391	0.252
SN → INT & PBC → INT	-0.662	-0.571

Note: INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control. Source: Own data.

Integrated Model

The bivariate correlations of the indirect and the direct indicators of SN and PBC show that the SN construct shows more validity than the PBC construct. In the case of SN, the bivariate correlations corroborate the significant influences found from beliefs on SN in the SEM while the comparison of correlations and SEM coefficients for the PBC construct shows that the relationships are not as clear. A meta-study by Armitage & Conner (2001) showed mean correlations of .50 for SN measures and of .52 for PBC measures.[405] In the application at hand, the mean correlation of the significant SN-beliefs with the direct SN measures is .44. For PBC it is difficult to determine how to calculate such a mean correlation because the bivariate correlations and the SEM coefficients provide different indicators regarding which items have a close relationship with PBC. So while measurement of the PBC construct within the overall model does show some difficulties (although it should be noted that according to model fit results of the single PBC construct, all values indicate that the proposed model structure fits the empirical data very well), the measurement of SN is both within the model and separately very satisfactory.

Looking at the significant standardized weights and the formulation of the formative indicators (see Table 30) one can see that SN is mostly determined by the family while friends and people of the neighborhood also have a significant influence on the construct. These groups of people live in the closer vicinity of the respondents and the model has shown that they compose part of the social network in which the respondents act. What the government allows was thought to be important as a regulatory authority, but the empirical analysis proved otherwise: the government does not belong to the group of significant others that contribute to the formation of subjective norm in the sample. Of the five hindering and fostering factors that were assessed as components of PBC, two were found to be important for the households. Key importance is attributed to getting a loan from a bank and also the times feeling ill play a role for perceived control over enhancing the tourism supply. The review of suggested modifications furthermore revealed that what the family thinks should be done – which was originally only directed at SN – has a highly significant positive influence on PBC. The more the family thinks that the household should enhance the tourism supply, the higher the perceived control over this behavior. The influence of this item on PBC is larger than that of the significant formative PBC-items, thereby emphasizing the role the family plays for perceived control. It seems that possibly due to the collectivist culture (see Chapter 3.3), the family's opinions exert an influence on PBC above and beyond the correlation between the constructs SN and PBC themselves.

SN and INT items do not discriminate very well. Asking for two factors in the EFA provides the distinction of the items as it is theoretically hypothesized, but without restriction a one factor

[405] Cf.: Armitage & Conner 2001, p. 481.

solution is suggested. On the other hand fit values for the overall SEM show that the modelled structure represents the empirical data well and corroborate the postulated constructs.

Moderation of PBC

It was possible to confirm the necessary metric invariance in order to be allowed to compare path coefficients across groups. However, scalar invariance could not be confirmed (and partial scalar invariance could not be achieved) which made it impossible to compare latent means. The moderation analysis showed that the moderating effect of PBC on the structural relationships of ATT and SN on INT proposed by Yzer (2007) are not prevalent in the current study. Households low in perceived control do not show significantly different path coefficients than households high in perceived control. Therefore, the amount of control a household perceives has no effect on how SN or ATT influence INT.

Even if PBC has no moderating effect for the current application, it still is an important component for the model as a whole. The analysis has shown that PBC has a significant influence on INT with a standardized coefficient of .44 (in the Integrated MIMIC-Model) and thereby contributes to the explanation of the variance found in INT. With an explained variance of .70 for the integrated model, the proposed structure explains a fair amount of the variance in INT. The formative indicators for PBC also show which aspects are important for the local population when they think of control over enhancing the tourism supply. This information is considered to be very useful but was neglected in the group comparison. Altogether, the analysis shows that retaining the PBC construct as a separate explanatory force within the model is highly advisable.

The analysis of a moderating effect has some methodological difficulties. Testing moderation effects has low statistical power and can therefore lead to an erroneous rejection of the hypothesis on the moderating effect. With a larger sample size it might be possible to confirm the proposed moderation. Another difficulty arises from the skewed distribution of the predictors. If they showed a more even distribution and more variance, the detection of a moderating effect from PBC would be more likely.[406]

Incorporation of Background Variable Experience

The mediation analysis shows that experience measured by the amount of different kinds of services in the tourism sector exerts a significant indirect effect on INT which is mediated by SN, PBC and snb3br. With a standardized total value of .28 this effect is considerably high, meaning that whether or not and how involved in touristic activities respondents are, is important for the formation of an intention regarding an enhancement or starting such activities. The fact that the influence from experience on SN, PBC and snb3br is positive indicates that the more experience the respondents have, the higher are the values on SN and PBC, meaning that significant others are more in favor and perceived control is higher. In other words: the more experience someone has, the more likely it is that someone has a positive intention to enhance his or her activities in the tourism infrastructure.

Since the effects of experience are mediated by other explanatory factors, the incorporation of the variable does not add to the explained variance of INT. However, including experience in the model enhances the understanding of underlying reasons for the manifestations of constructs. The analysis

[406] Cf.: Yzer 2012, pp. 113f.; Fishbein & Ajzen 2010, p. 192.

showed that whether or not someone has already made experiences in the tourism sector and how diversified that person's offers are, has an influence on factors that in turn influence INT. This has implications for interventions that are supposed to target the underlying structures of the latent constructs. On the one hand, the beliefs with significant influences on SN and PBC should receive careful consideration for the formulation of recommendations for interventions because they are the underlying foundation of these constructs. On the other hand, experience is an important variable that exerts a considerable indirect effect on INT, meaning that by giving someone the opportunity to make first experiences, the chances that this person will develop an INT to enhance such activities, will rise.

One could think that the rejection of Hypothesis 18 ("The indirect effect of experience on INT mediated through PBC is stronger than the mediated effect through ATT and SN.") derives from the fact that SN has a stronger influence on INT than PBC. However, looking at the standardized direct effects of experience on SN and PBC it shows that experience also has a stronger effect on SN than on PBC (.258 and .215 respectively, see Table 33). So if a respondent is already experienced in the tourism sector, the people in his or her surrounding also have a more positive opinion towards him or her expanding already existing activities. This effect from experience is even a little stronger than the effect it has on the personal perception of control that the respondent feels. However, looking at the critical ratio for the pairwise parameter comparison shows that the difference is not significant.[407] The variable experience is in itself a context variable sine it determines the setting for the formation of psychological factors. By shaping the circumstances for action, experience establishes the framework for the individual behavior.

Overview of Hypotheses

The following table gives an overview of the hypotheses that were formulated with regard to the Theory of Planned Behavior in Chapter 4.1.

Table 36: Summary of hypotheses 1 through 18 + 29 and conclusions

Hypothesis		Conclusion
Hypothesis 1	The more positive the ATT towards an enhancement of tourism supply in the next twelve months, the higher is the INT to enhance tourism supply in the next twelve months.	Rejected
Hypothesis 2	The higher the SN towards an enhancement of tourism supply in the next twelve months, the higher is the INT to enhance tourism supply in the next twelve months.	Confirmed
Hypothesis 3	The higher the PBC towards an enhancement of tourism supply in the next twelve months, the higher is the INT to enhance tourism supply in the next twelve months.	Confirmed
Hypothesis 4	ATT, SN and PBC correlate.	Confirmed*
	* (for the integrated model, the correlations between ATT and the MIMIC constructs were modeled between the formative indicators and ATT)	
Hypothesis 5	The partial regression weight of SN on INT is larger than the partial regression weight of ATT on INT.	Confirmed

[407] With a value of -1.048 the critical ratio is lower than the cut-off value of 1.96.

Hypothesis		Conclusion
Hypothesis 6.1 –6.11	The higher the latent constructs INT, ATT, SN and PBC, the higher the value of the direct measures.	Confirmed
Hypothesis 7.1 –7.14	The higher the agreement with behavioral, normative and control beliefs, the higher are ATT, SN and PBC respectively. ** Confirmed for: - SN: "neighborhood", "family", "friends" - PBC: "ill or tired", "bank loan" *** Rejected for: - All ATT beliefs - SN: "government" - PBC: "limited time", "workers", "financial needs"	Partly confirmed**, partly rejected***
Hypothesis 8	The structural paths from ATT and SN to INT are significantly higher for households with high PBC than for households with low PBC.	Rejected
Hypothesis 9	Experience has a positive influence on beliefs which significantly influence ATT (behavioral beliefs mediate the influence of experience on ATT).	Not tested because behavioral beliefs were not modeled
Hypothesis 10	Experience has a positive influence on ATT.	Rejected
Hypothesis 11	Experience has a positive influence on beliefs which significantly influence SN (normative beliefs mediate the influence of experience on SN).	Partially confirmed (only for belief "family")
Hypothesis 12	Experience has a positive influence on SN.	Confirmed
Hypothesis 13	Experience has a positive influence on beliefs which significantly influence PBC (control beliefs mediate the influence of experience on PBC).	Rejected
Hypothesis 14	Experience has a positive influence on PBC.	Confirmed
Hypothesis 15	Experience has no direct effect on INT.	Confirmed
Hypothesis 16	Experience has an indirect effect on INT which is mediated through ATT, SN and PBC.	Confirmed (except for ATT)
Hypothesis 17	Experience has an indirect effect on INT which is mediated through beliefs which significantly influence ATT, SN and PBC.	Rejected
Hypothesis 18	The indirect effect of experience on INT mediated through PBC is significantly larger than the mediated effect through ATT and SN.	Rejected
Hypothesis 27	Experience has no indirect effect on INT which is mediated through ATT	Confirmed

Note: INT = intention, ATT = attitude, SN = subjective norm, PBC = perceived behavioral control. Source: Own data.

Generally, the model structure was confirmed: The structural hypotheses (Hypothesis 1 through Hypothesis 4) were all confirmed, except for Hypothesis 1. Along with the fact that model fit is good, this corroborates the structure of the latent factors. Since there is no significant influence from attitude on intention, Hypothesis 5 stating that the influence from subjective norm on intention is larger than the influence from attitude on intention is confirmed. The fact that Hypothesis 6.1 through Hypothesis 6.11 were confirmed shows that the latent psychological constructs influence

the manifest items from the questionnaire which were used to measure the constructs. Hypothesis 7.1 through Hypothesis 7.14 address various underlying beliefs of the constructs. These were partly confirmed, but also partly rejected, thereby showing which of the salient beliefs significantly influence the latent constructs and could be targeted in interventions to strengthen subjective norm and perceived behavioral control.

Two different kinds of effects were tested: a moderation effect and a mediated effect. The moderation of the influences from attitude and subjective norm on intention by perceived behavioral control which is expressed in Hypothesis 8 was not confirmed. Hypothesis 9 through Hypothesis 18 and Hypothesis 27 all deal with the mediated effect of the background variable experience on intention. Generally there is evidence for a mediated effect, but not via all variables or factors. Experience has a positive influence on subjective norm and perceived behavioral control which confirms Hypothesis 12 and Hypothesis 14, but no influence on attitude, which rejects Hypothesis 10 and since no beliefs were integrated for attitude, Hypothesis 9 was not tested. There is no significant influence from experience on either of the control beliefs, so Hypothesis 13 was rejected, but Hypothesis 11 could be confirmed for one of the normative beliefs. As it is proposed by the Theory of Planned Behavior and Hypothesis 15, the background variable has no direct significant effect on intention. Except for attitude, all latent constructs mediate the effect of experience on intention, which partly confirms Hypothesis 16. Since there is only one belief which mediates the effect from experience on intention, Hypothesis 17 is rejected. Comparing mediated effects via perceived behavioral control and subjective norm shows no significant differences, therefore Hypothesis 18 is rejected. As the basic model had already shown that attitude has no significant effect on intention, Hypothesis 27 states that experience has no mediated effect on intention via attitude – this was confirmed.

6 Discussion

6.1 Discussion of Study Design and Data Quality

6.1.1 Study Design

Despite the fact that secondary data on the study regions is available from the National Statistics Office of Georgia it was necessary to conduct a detailed survey including all the information necessary to examine the proposed relationships. A quantitative **household survey** was conducted to generate data to answer the research questions described in Chapter 2.4. The survey was designed to include the variables that would be necessary to analyze the fundamental research questions. Cross-sectional data is appropriate to both compare the socio-economic living conditions of the respondents in the research areas and villages and to analyze the behavioral beliefs of the respondents.[408] A limitation of the current study that derives from this study design is related to the lack of an actual measurement of behavior itself. Time and funding restrictions prevented a second survey period in which a measure of whether or not the respondents put their intentions into practice. According to Fishbein & Ajzen (2010), behavioral intentions indicate a respondent's "readiness to act"[409]. However, there can be issues that prevent the respondent from turning an intention into action and there is a known intention-behavior gap.[410] In order to assess practical behavior and the actual strength of the relationship between intention and behavior it would be necessary to do a follow-up survey. Nevertheless the data collected here gives valuable information on the underlying causes of intention.

The **quantitative approach** is appropriate for this research since it was the intention to compare the living conditions of the research areas in general. With the quantitative assessment of the socio-economic variables it was possible to empirically test group differences for significance. Testing the relationships proposed by the Theory of Planned Behavior also required quantitative data. While quantitative research designs have the advantage of allowing statistical tests of hypotheses and statements on general tendencies of the study population, these benefits are accompanied by disadvantages. The compressed character of the aggregated data renders statistical parameters that give a quick overview of e.g. income, size of cultivated land or behavioral intentions, but they fail to give in-depth information. Because standardized questions lack openness, they leave no room for personal explanations of the respondent aside from the formulated questions. In order to gather such information, a qualitative approach would have been the method of choice. Qualitative techniques are characterized by a large degree of openness and give the respondent the possibility to express freely what he or she thinks. Such information can then be used to develop response categories or make a classification or even generate hypotheses. On the other hand, they do not allow the statistical analysis of significances.[411] Since the comparison of regions and villages was a core objective in this study, the quantitative approach was more suitable than qualitative interviews.

[408] Cf.: Diekmann 1997, pp. 264, 267-269 and 287f.
[409] Fishbein & Ajzen 2010, p. 39.
[410] Cf.: Fishbein & Ajzen 2010, pp. 56–60.
[411] Cf.: Diekmann 1997, pp. 443–445.

With regard to the analyzed behavioral intentions the quantitative approach provides the required data to test whether or not the psychological constructs attitude, subjective norm, perceived behavioral control and intention show the relationships proposed by Fishbein & Ajzen (2010). If resources had allowed it, it would have been beneficial to conduct qualitative follow-up interviews to supplement the quantitative findings from the calculation of the structural equation model. These interviews could have been used to explore the causes for the strong importance of the social surrounding for the intentions of the respondents. Such a mixed method approach with narrative interviews could help to learn more about the reasons why the social surroundings are important for the formation of intentions to enhance the tourism supply. Concerning the attitude component it would be valuable to openly ask about the thoughts on the questionnaire items of attitude in cognitive pretest interviews to find out if and how the wording can be improved. In light of the meta-study by Armitage & Conner (2001) that mentions attitude as the strongest component in the prediction of intention, it seems possible that this component begs further research for the target population and the analyzed behavior.

An extensive **standardized questionnaire** was developed in close cooperation with experts – members of the AMIES project (Chapter 1.1) as well as quantitative researchers – in order to accommodate both project needs and to answer the fundamental questions of the research at hand. By and large the questions were closed questions which were supplemented with some half-open questions. Initially, the source questionnaire was formulated in English. In a next step, two Georgian project members translated the questionnaire into Georgian. This Georgian version was checked by a third Georgian project member. To secure the accuracy of the translation, a back translation from Georgian into English was done by an external person that had not been involved in the translation into Georgian and was also not part of the project team.[412] This translation only showed minor unimportant deviations from the original English questionnaire, indicating the validity of the Georgian questionnaire.

Before carrying out the household survey, a **pretest** (n=23) of the questionnaire was conducted in the main villages of the two research regions. Problematic items and formulations were identified and changed (for more detailed information see Volz 2011). The pretest was also used to carry out an **elicitation study** for the salient beliefs that are needed for the formulation of indirect measurements for the explanatory constructs in the Theory of Planned Behavior. The recommendations of Fishbein & Ajzen (2010) to ask open questions regarding the salient beliefs to persons from the target population were followed. In the same step, direct measures were included in the pretest questionnaire and asked to the respondents after they had answered the open questions. In this way it was possible to pretest the items for the Theory of Planned Behavior (TPB) along with the questions on the socio-economic living conditions which also provided demographic variables and background factors for the mediation analysis.[413] Some items for the indirect measurements had also been designed prior to the pretest in order to be able to see if these items needed alteration. The items were based on thorough research and field experience in the regions. It would have been desirable to conduct a second pretest in order to see if the items that were developed after the

[412] Cf.: Harkness & Schoua-Glusberg 1998, p. 111.
[413] Cf.: Fishbein & Ajzen 2010, pp. 451–456.

elicitation study or had been changed due to feedback from the pretest worked well, but because of the high costs in both money and time it was not possible to do so. However, the fact that it was possible to construct a model with good model fit values shows that the used items provided good measurements for the latent constructs. The elicitation study also revealed that many of the salient beliefs had already been thought of by the researchers and had been heeded in the indirect measurements. This furthermore confirms sound groundwork before going into the field.

Since the questionnaire was applied to a subset of the inhabitants in the study regions, this is only a **sample** of the total population.[414] A stratified sample was drawn. The first strata – which is the regions with specific villages – was a theoretical sampling decision (see Chapter 2.2 for the reasons of choosing these research areas) that defines the target population as the number of all households living in certain villages of the areas Kazbegi and Borjomi; this first step was not random. In the next step, the number of households to be questioned per village was determined proportional to the number of inhabitants (with a minimum amount for the smallest villages). The choice of households within the research villages followed random route sampling. The interviewers divided the streets in the villages among each other so that each interviewer covered a different part in the village and they were ordered to ask every second to fourth household (depending on the size of the village). As it was not possible to obtain information on demographic variables such as distribution of age or number of household members prior to the survey, it was not possible to use such information to draw a sample that represents this structure. The only piece of information that was considered in the sampling process was the size of the villages. The amounts of drawn households was adapted to the sizes of the villages according to the number of inhabitants available from the Georgian census in 2002.[415] In this way, a stratified sample that is proportional to the villages was acquired.[416] The sampling process within the strata is random and gave every element from the sub-target population the same probability of being included in the sample.[417] As a result, the conclusions drawn from the data that was generated from this survey only apply to the specific research villages within the study regions. It is not possible to make inferences to other regions of Georgia – also not if they share basic characteristics such as being mountainous. The inferences from the sample can only hold for the households in the surveyed villages. Being interested in information on the living conditions of people living together and sharing income and expenses, a household survey was conducted. The interviewers had been instructed to interview a person that is involved in the decision making progress of the household. It should be mentioned that this is not always the head of the household and that other people of the household could hold other opinions. Yet the respondent serves as a proxy for the opinion of the whole household and his or her information is used to understand the living situations of rural Georgian households in the research areas.

6.1.2 Data Quality

In order to ensure a high level of data quality, standards for the development of the standardized questionnaire were considered and data was compared to results from similar surveys and secondary

[414] Cf.: Kühnel & Krebs 2006, p. 135.
[415] Cf.: National Statistics Office of Georgia (GeoStat) n.d.
[416] Cf.: Diekmann 1997, pp. 337f.
[417] Cf.: Diekmann 1997, p. 330.

data to see if the collected information is plausible. The following sections outline these methods that were used to achieve good data quality: First possible biases from the face-to-face interviews are briefly reviewed before the gathered data is compared to secondary data and similar surveys.

The questionnaire was developed according to recommended guidelines[418], tested in a pretest and adjusted[419] before starting the actual household survey. Other sources of errors may result from social desirability or as a reaction to the interviewer and his or her behavior. Social desirability mostly occurs with delicate questions which might be unpleasant or embarrassing if answered truthfully. Interviewer effects can be caused by e.g. gender or age of the interviewer and produce biased answers.[420] For the present study, interviewer effects are not very likely because answers to the questions of the topics covered in the questionnaire are not likely to be influenced by certain features of the interviewer. Social desirability on the other hand can have an effect on answers to e.g. questions on the income situation or possession of land and other material goods. Two options are possible to occur in this case: people might exaggerate in order to make themselves look better or they might deliberately keep possessions a secret. Concealing income or assets seems more likely in this survey because the respondents might hope for aid programs if they appear poor and they might fear negative consequences in the form of a reduction of social benefits if information that they e.g. had the possibility to cultivate additional land leaked out to the government. The interviewers also reported that respondents sometimes lacked knowledge on e.g. sizes of land plots or amounts of generated animal products. Although respondents were able to simply indicate that they owned a certain property or generated an animal product, it is possible that respondents tried to estimate the amounts and misjudged the true amount. Generally it is very difficult to assess whether or not the answers of the respondents are accurate. However, the next paragraphs will compare the data from the survey with secondary data from similar investigations, project reports and official sources in order to evaluate if the data is reasonable.

Agricultural data are very important for the present investigation. With regard to livestock, **cows, poultry and sheep** have proven to be of greatest importance for the two research regions. Data from the First National Agricultural Census in Georgia is the best available source for a comparison, although it should be kept in mind that this data is from 2004. This data was used to compare the results of our own survey with official statistics. Of the sample from the Kazbegi district, 33 % of the households do not own any cattle, whereas 22 % of all households did not own any cattle in 2004 according to the Georgian Agricultural Census. Looking at the amounts of animals per holding, it shows that also in 2004 the majority of households owned between one and four animals. For the Borjomi district, the amount of households without cattle is 49 % and corresponds well with the 52 % of households from the census. For this region there were single households that owned larger amounts of animals in 2004, but since the household survey of this analysis was only conducted in selected villages of the region, it is very well possible that these households are located in the

[418] Cf.: Porst 2009.
[419] Cf.: For the pretest and adjustments of the questionnaire see Volz 2011. For literature on pretesting see Prüfer & Rexroth 1996; Presser & Blair 1994.
[420] Cf.: Diekmann 1997, pp. 382–403.

administrative center of the region which was not part of the survey.[421] The number of households owning poultry was higher in the census from 2004 for both regions than it is in the current survey (Kazbegi census 2004: 50 %, survey 2011: 33 %; Borjomi census 2004: 55 %, survey 2011: 48 %). It is impossible to know, whether this difference appears due to a change from 2004 to 2011 or due to unreliable answers, but there is no reason to assume that respondents would intentionally lie about the amount of chicken they own. Regarding the amounts of owned animals, both data sources show similar results: there are hardly any cases that own more than 20-49 animals.[422] Also when examining the number of sheep it seems as if the households keeping any sheep has declined from 2004 to 2011. Whereas 18 % of household from the census in 2004 owned sheep in Kazbegi, this value is 11 % for the survey from 2011. In Borjomi the amount was 8 % in 2004 and 4 % in 2011. The amounts from the data sources correspond to one another insofar as Kazbegi both times features some exceptional cases that own 100 or more sheep while Borjomi only contains cases that own less than 100 animals (one case deviates from this pattern).[423] Given the overall tendency of declining animal numbers in Georgia between 2004 and 2011 (see Figure 3)[424], the differences between the numbers from the census in 2004 and this household survey from 2011 are plausible. In any case this kind of comparison of two data sets that differ in several aspects can only be seen as a careful attempt of validating data. The annual statistical publication "Agriculture of Georgia" published by the National Statistics Office of Georgia (GeoStat) gives information on the **average yield of potatoes**[425]. Comparing this value of 136 dt/ha in the year of the survey with the average productivity of the sample (115 dt/ha) does not raise concerns since it is reasonable to assume that other regions of Georgia are more productive than Kazbegi and Borjomi and achieve a higher average yield than the sample. In some cases the categories of the publication by the Georgian statistics office differ from the ones used in the survey and some crops that are listed in the report were only mentioned by a minority of households (less than 15 %) in the sample and are not compared to the national average since they are not common for the research regions.

Aside from general statistics on overall Georgia, some reports or articles offer quantitative data on specific regions or research areas. In an assessment of the value chain of dairy products, the United States Agency for International Development (USAID) (2012a) jointly analyzed the Stepantsminda municipality and the Dusheti municipality. In their report they give the numbers of households owning certain amounts of cows. This distribution is similar to the data from Kazbegi and shows that low livestock numbers are common in that region.[426] For questions that asked respondents to give amounts of e.g. animal products such as milk or cheese produced from milk, the interviewers reported that some respondents had difficulties answering these questions. The reason for this is that most households use the products for their own consumption and therefore do not feel the

[421] Cf.: National Statistics Office of Georgia (GeoStat) n.d., pp. 232f.
[422] Cf.: National Statistics Office of Georgia (GeoStat) n.d., pp. 247f.
[423] Cf.: National Statistics Office of Georgia (GeoStat) n.d., pp. 238f.
[424] Cf.: National Statistics Office of Georgia (GeoStat) 2015a, pp. 57f.
[425] Cf.: National Statistics Office of Georgia (GeoStat) 2015a, p. 32.
[426] While in Stepantsminda and Dusheti, of the households with cows 50 % own 1 or 2 animals, 35 % own 3 to 4 animals, 10 % own 5 to 10 animals and 5 % own 11 to 20 animals (United States Agency for International Development (USAID) 2012a, p. 14), in the sample from Kazbegi, 64 %, 13 %, 19 % and 2 % own 1 to 2, 3 to 4, 5 to 10 and 11 to 20 cows respectively.

need to keep track of their amounts as a person who sells on a market would. In a case study from a district in the lowlands of Georgia, Kegel (2003) was faced with this problem as well. She reports that it was difficult to determine produced amounts, but she ascertains reliability for data on livestock.[427] A United Nations Development Programme (UNDP) report for the Borjomi municipality from 2011 assesses the average milk production per cow to be 1500 liters per year.[428] Comparing this value to the average for the Borjomi sample (1136 liters), the respondents indicated lower milk yields. The average for cows from Kazbegi is even lower with a value of 644 liters. When contrasting the main villages of the two regions to the respective smaller villages of the regions, it shows that the average milk production per cow is lower in the smaller villages. A study that analyzed daily milk output of cows from Sages (30 km north of Tbilisi) reports that cows give 3 to 4 liters a day due to a lack of protein-rich nutrition.[429] For Borjomi, the average daily output of the sample is 3.1 liters while the average daily output of cows in Kazbegi amounts to 1.8 liters. The lower values for the Borjomi research area when compared to other studies can be caused by the fact that the villages of the sample are mostly located in higher altitudes than the administrative center and other villages of the region. Conditions in the sampled villages are more difficult than in the overall region. Since the Kazbegi region is more secluded than the Borjomi region, the lower values for Kazbegi reflect the fact that access to resources is more limited than in Borjomi. All in all, the values from the survey are plausible. In an article by Tephnadze, Abdaladze, Nakhutsrishvili et al. (2014) that analyzed phytodiversity in the Kazbegi area, mean sizes of potato fields are reported for the villages Stepantsminda and Kanobi. These means of 300 m² and 700 m² respectively roughly correspond to the medians from the household survey of 300 m² and 900 m² for Stepantsminda and Kanobi.[430] Since the sample contains some extreme cases, the median is more appropriate than the mean. It is very likely that the respondents who mentioned these extreme values greatly overestimated the sizes of their plots. A study in the Kazbegi region by the Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) (2010a) reports that households plant potatoes on a plot with an average size of .08 ha.[431] Looking at the same value from the sample shows a mean value of 7.9 ha, which is clearly a mistake and requires the exclusion of extreme cases from analyses. The aforementioned UNDP report also analyzed household land for the village Tsagveri. They report an average size of .25 ha. The current analysis found that the households from that village on average own .18 ha of land when adding up all of their land parcels. There is a considerable difference between the two values, but the measurement is not consistent. Therefore, it is not possible to make a meaningful comparison. The same analysis says that in Tsagveri the amount of the population older than 65 years is especially high with a share around 28 %.[432] Examining not only the respondents but also the age of the other household members from the survey shows that 33 % of the people from Tsagveri are older than 65 years. When looking at the average household size, households from the sample are larger with 3.6 persons per household

[427] Cf.: Kegel 2003, p. 157.
[428] Cf.: Ecovision – Union for Sustainable Development 2011, p. 7.
[429] Cf.: Haerdle & Bontjer 2010, p. 303.
[430] Cf.: Tephnadze, Abdaladze, Nakhutsrishvili et al. 2014, p. 277.
[431] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010a, p. 49.
[432] Cf.: Ecovision – Union for Sustainable Development 2011, p. 14.

compared to 2.9 members according to the analysis of the UNDP report. It is very common in Georgia to live in one place and stay in another (often mountainous) village for several weeks or months per year. This is problematic for population data because these people can be official residents of some village even though they spend the majority of their time elsewhere.[433] This also has implications for the sample that was drawn for this analysis because it was based on official population data. However, there is no available source that indicates how many of the residents that registered in a village can be considered permanent residents.

Although all these comparisons need to be viewed with caution, they give a basic indication of the plausibility and trustworthiness of the data. Comparing the data directly with one another is not always possible and leaves some uncertainty as to whether or not it can be expected that values are exactly alike. However, seeing that many of the referenced data sources show similar results leads to the overall conclusion that the data from the household survey in the Kazbegi and Borjomi regions from 2011 can be trusted. Special care should be given when analyzing and interpreting data on plot sizes since these were most prone to unreasonable values.

6.2 Results from the Analysis of Socio-Economic Living Conditions

Quantitative household data was used to assess the socio-economic living conditions of the population in the research areas Kazbegi and Bakuriani.[434] The analysis of the living conditions in the study regions renders quantitative in-depth information and tests hypotheses on group differences between the two regions and also between the smaller villages and the main villages of the regions.

6.2.1 Importance of Agriculture and Tourism

The analysis of secondary data on Georgia had already shown that in 2004, 0.1 % of all holdings[435] were agricultural enterprises and 82 % of the holdings generated output mainly for self-consumption. 80 % of the holdings in the research area Kazbegi produced mainly for self-consumption and in Borjomi this amount was at 97 %.[436] Most of the time the analysis of the data from the research areas was presented in four groups: The largest village from each region was one group (i.e. Stepantsminda for Kazbegi and Bakuriani for Borjomi) and the smaller villages from the regions were grouped into one group for each region (i.e. Kazbegi villages for Kazbegi and Borjomi villages for Borjomi). For a brief but concise summary see Table 22. The data from the household survey confirms that also for the selected villages self-consumption plays a major role in the use of agricultural products. In the main villages Stepantsminda and Bakuriani, 8 and 9 % respectively sell at least part of their production. Compared to the main villages of the regions, the share of households selling some of their production in the smaller villages from Kazbegi and Borjomi is a little higher with 9 and 13 % (see Chapter 5.3.4), but agricultural activities are mostly carried out for subsistence purposes. Small amounts of livestock are kept (of the 59 % of households that own cattle most keep between 1 and 5 animals and of the 41 % that own poultry most keep between 1 and 10) and the

[433] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 31.
[434] For information on the choice of the study villages and information on the study regions see Chapter 2.2.
[435] The term “holding” is used in the official statistics of Georgia. The use of the term in this work does not abide by an agricultural definition of holding.
[436] Cf.: National Statistics Office of Georgia (GeoStat) n.d., p. 3.

most frequent animal products are milk, cheese, eggs, butter and meat. Comparing the analyzed groups with one another it shows that animal products are more important in the two groups of the smaller villages than in the two main villages. This coincides with the second most important source of income (pensions were mentioned most often in all groups[437]) that was mentioned in the groups of the smaller villages; in these two groups it was self-employment in agriculture, whereas it was wage employment and self-employment in tourism for Stepantsminda (along with wage employment outside agriculture) and Bakuriani respectively.[438] It seems as if with a growing importance of the tourism sector, households abandon agricultural activities. While 73 % and 74 % of the households in the Kazbegi villages and the Borjomi villages respectively are not involved in tourism at all, only 48 % and 35 % of the households in Stepantsminda and Bakuriani are not active in the tourism sector. Also the diversification of offers in this sector is higher in the main villages. Except for potatoes which are grown by 76 % of all households, less than half of the questioned households cultivate crops, vegetables and fruits. Compared to the Kazbegi region, households in the Borjomi region are less frequently planting potatoes, apples and fodder. Altogether, cultivation takes place on small land plots with low yields. The only group in which arable land is more common as the type of land parcel than vegetable garden is in the group of the Kazbegi villages which shows the highest percentage of households cultivating fodder with 23 %, but even here grains such as wheat or barley are not cultivated by households of the sample. Bakuriani shows the highest amount of households (53 %) that diversify their activities by being involved in both agriculture and tourism, followed by Stepantsminda (33 %). In the Borjomi and Kazbegi villages, the majority of the households is only involved in agriculture (58 % and 47 % respectively). Of the cases that have some kind of agricultural production, 83 and 84 % from Kazbegi and Borjomi respectively answered that they use 100 % of their production for self-supply. This clearly shows that for the majority of the households that are involved in agricultural production, agriculture is not used for commercial purposes. Even for the few households that indicated that they sell part of their production, the shares are mostly small. The interviewers reported that respondents mentioned that they also give excess production to relatives and friends, but this was not accounted for in the questionnaire. A similar household survey in Georgia reports the practice of bartering as well and emphasizes its importance for the Georgian society.[439] In their analysis on the Georgian Grazing System, Haerdle & Bontjer (2010) come to the conclusion that cattle are mostly kept to supply the household with milk products and they consider the milk output of their sample (3 to 4 liters per day) as low.[440] With values of 3.1 and 1.8 liters for Borjomi and Kazbegi respectively, the sample at hand shows a similar tendency of low livestock numbers with low yields and usage for self-supply. So also in this case, the main function of cattle is self-supply. A report that analyzed data from the villages Tsagveri and Daba (both in the Borjomi region) with similar sizes of land plots postulates that "[…] such small fragmented farm land plots can

[437] This shows that many households have at least one member that is at least 60 (women) or 65 (men) years of age.
[438] It has to be noted that it was not possible to confirm a significant mean difference between the income in the analyzed groups. The only villages that significantly differ are Juta (the poorest of the villages) and Stepantsminda. However, the small sample sizes when separately analyzing the villages make it difficult to detect significant differences.
[439] Cf.: Kegel 2003, p. 159.
[440] Cf.: Haerdle & Bontjer 2010, p. 303.

only support subsistence agriculture."[441] These sources corroborate that with the current status in the research areas, commercialization of agricultural activities of private households is highly unlikely. Another point that has to be stressed is the self-image of the people. Oftentimes people do not think of themselves as farmers. Agriculture is a temporary occupation, but they seek to find formal, salaried employment.[442]

Data from the First National Agricultural Census of Georgia shows that the importance of agriculture in the two study regions differs. While 88 % of the holdings (for these regions i.e. family holdings in 99.9 %) are operated by a person for whom agriculture is the main activity in the Kazbegi district, this is the case for only 38 % of the holdings in the Borjomi district.[443] This secondary data shows that households in Borjomi mostly have a main activity other than agriculture. It also reflects the fact that there is a longer tradition in tourism in Bakuriani than in Stepantsminda. Although the two research regions differ slightly in the strength of this tendency, the survey data shows that in both regions, the households in the main villages are the ones that are most active in tourism whereas the households in the smaller villages show more activities in agriculture than the households in the main villages. Due to the cross-sectional data from this study it is not possible to confirm if households shift their activities from agriculture to tourism, but given the fact that the smaller villages that receive fewer visitors show less activities in the tourism sector and are more active in agriculture and literature resources that confirm that Georgian households see agricultural production as a temporary occupation,[444] it is likely that touristic activities substitute agricultural activities. Moreover, both tourism and agriculture require inputs such as time, financial resources and manpower, making it difficult to continue working in both sectors in equal parts. The two study regions differ a little in the importance of tourism. Borjomi shows an even stronger emphasis on tourism, whereas in Stepantsminda wage employment in the tourism sector is more common, opposed to self-employment in tourism in Bakuriani.

6.2.2 Group Differences

Chapter 4.2 introduced several hypotheses on group differences between the two regions and between villages. Testing these hypotheses revealed differences in the way that tourism is characterized in the two regions. The households in Borjomi have been involved in the tourism business for a significantly longer time than the households in Kazbegi (Hypothesis 20). However, comparing both regions there is no statistically significant difference in the proportion of households that are involved in tourism (Hypothesis 19). So although households in Borjomi have a longer tradition of working in the field of tourism, the households in Kazbegi show an equal amount of active households today. There is also no significant difference between the numbers of different kinds of touristic offers that are made. It was supposed that since Kazbegi is mainly a summer holiday destination but can also be used for winter holidays, there would be a greater diversification in the offers, but this could not be verified (Hypothesis 21). Compared to Borjomi, significantly more household members leave Kazbegi in winter, but there is no significant difference of people leaving

[441] Cf.: Ecovision – Union for Sustainable Development 2011, p. 16.
[442] Cf.: Kegel 2003, p. 154; Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 13.
[443] Cf.: National Statistics Office of Georgia (GeoStat) n.d., pp. 25f.
[444] Cf.: Kötschau 2012, p. 167; Kegel 2003, p. 154.

in summer between both regions (Hypothesis 22 and Hypothesis 23). The numbers of offers made in smaller villages are significantly smaller than the offers made in the main villages.[445] Contrasting the main villages against the grouped smaller villages, it shows that the shares of households that are involved in tourism are significantly larger in the main villages than in the smaller villages and this holds for both regions and between regions (Hypothesis 24). When comparing Stepantsminda to both groups with the summed smaller villages, the shares of households that mentioned wage employment as a source of income is significantly larger (Hypothesis 25), but for Bakuriani this is not the case. In general, wage employment is mostly not within the agricultural or the tourism sector. Stepantsminda as the regional center of the Kazbegi municipality has by far the largest amount of households that mentioned wage employment as a source of income while self-employment in tourism is the second most important income source for Bakuriani. In case of both the Kazbegi and the Borjomi villages, self-employment in agriculture is the second most important source of income, emphasizing the importance of agriculture for the more remote smaller villages. The most frequently mentioned source of income for all four groups is pensions. This shows that many of the households have at least one member in the pension age. Despite the fact that the average household income per village differs in numbers, there were almost no statistical differences (only Juta has a significantly smaller household income than Stepantsminda; Hypothesis 26). It has to be noted, though, that some of the groups have very small sample sizes when analyzing each village separately and income is a very sensible piece of information which was not given by every household. It is likely that it would be possible to detect a significant difference if the sample was larger.

The analysis of descriptive data and group differences has shown that agricultural production mainly or almost exclusively serves subsistence purposes in the research areas. The low numbers of livestock and small land plots already suggest that subsistence use is very likely[446] and the share of sold amount of agricultural production compared to private use confirms this notion. In light of the lack of processing industry and other infrastructure[447], unstable trade relations[448] and cheap imported products[449], large scale commercialization of agricultural products is unlikely in the case of the research villages. The fact that less than 5 % of all households mentioned wage employment within the agricultural or the tourism sector as a source of income shows that wage employment is only relevant outside the agricultural and the tourism sector, but even here wage employment is only mentioned by 21 % of the households from Stepantsminda. For all other groups, wage employment outside the agricultural or the tourism sector provides an income source for less than 10 %. The rising numbers of tourists in Georgia[450] (see Chapter 2.1.4) and the locations of the study areas indicate that the tourism sector is a potential business branch. Since the survey is cross-sectional, it is not possible to portray the development in the regions, but the quantitative data

[445] There is one exception in this multiple group comparison: no significant difference was found between Bakuriani and the Borjomi villages.
[446] Cf.: Ecovision – Union for Sustainable Development 2011, p. 16.
[447] Cf.: Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) 2010a, p. 49; Ecovision – Union for Sustainable Development 2011, p. 16; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) 2013, p. 14.
[448] Cf.: Kötschau 2012, p. 167.
[449] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 36.
[450] Cf.: National Statistics Office of Georgia (GeoStat) 2013b, p. 211, 2015f, p. 211.

shows the importance of this sector for the private households: more than 40 % of the total sample is in some way active in the tourism branch and 51 % express that they intend to enhance or start activities in this branch.

6.3 Results from the Analysis of Behavioral Intentions

This chapter summarizes the results from the analysis of behavioral intentions. The overall focus will be on the outcomes of the model estimation (with the different steps of incorporating beliefs and testing for moderation and mediation effects) and what this means in more practical terms. However, the last section will discuss some methodological issues that need to be considered for this application.

6.3.1 Basic Model and Cultural Background

When looking at different items that were included in the data collection process regarding the **intention to enhance activities in the tourism supply**, it shows that the distribution always has two peaks, meaning that there were very few cases that chose the middle (value 3) of the answering scale (between 4 and 6 %) while most households had a clear tendency either in favor of an enhancement or against it. The strengths of this expression (both in favor of and against) differ in the way that the most extreme scale points 1 and 5 were chosen by fewer people than the more moderate options 2 and 4. When differentiating between households that are already active in tourism and households that are currently not active, between 53 and 66 % of the households that are already involved in the sector express a positive tendency towards enhancing (or starting) their activities. Even of the inactive households, between 28 and 39 % express their tendency to start activities in the tourism sector. It is evident that the declarations of the group of inactive households are lower, but given the fact that especially starting to work in a new business branch requires a lot of initial investment which households that are already involved do not have to make (or rather already made), it is not surprising to see that the amount of households leaning towards this venture is lower in the currently inactive group.

Even though 51 % of the households expressed that they intended to enhance their activities in the tourism sector, only 40 % deemed it likely or very likely that they would do so in the next year. This discrepancy points out the importance of determining factors that should be improved to enable households to become economically active in a new business branch or to increase existing offers. And this is where the Theory of Planned Behavior (TPB, see Chapter 3.2) comes into the picture. Being an approach from social psychology, the TPB examines factors that influence individual intentions in a framework that is composed of individual perceived abilities and limitations, personal relationships and the assessment of a behavior by the respondent him- or herself. Chapter 5.4.1 presents the **basic model** that was computed based on the TPB to understand which of the proposed latent constructs – namely attitude, subjective norm and perceived behavioral control – significantly influences the intention of the households to enhance existing offers or to start working in the tourism sector. [451] The calculated model explains 74 % of the variance in intention to enhance touristic activities. Comparing this value with an average of 39 % of explained variance from a **meta-study by Armitage & Conner (2001)** shows that the latent constructs explain the intentions of the

[451] For a comment on the issue of a regional group comparison see the end of this section.

households quite well.[452] The magnitude of the influences from the single constructs differs considerably from one another, as is to be expected according to Fishbein & Ajzen (2010).[453] The largest standardized effect on intention comes from the subjective norm component, which measures what the respondent feels others expect or want him or her to do. Subjective norm is followed by perceived behavioral control, which basically indicates whether or not the respondent feels capable of enhancing touristic offers. The personal attitude towards tourism enhancement of the respondent him- / herself fails to have a significant effect on the intention to do so. It is somewhat surprising *not* to find a significant influence from the attitude component, given that this construct generally has the largest influence on intention.[454] Regarding such differences in the strengths of the explanatory constructs, Fishbein & Ajzen (2010) refer to a study that specifically examined the influence of culture on attitudes and subjective norms within the TPB. Three experiments were conducted within this study. In all of the experiments, the self-concepts of the participants were primed, either to a private self or to a collective self. Just like the authors had expected, the weight of attitude was stronger if the experimental group had received the private self-prime, and the weight of subjective norm was stronger if the experimental group had received the collective self-prime.[455] Thus, it can be assumed that the cultural context in which the present study was conducted has an influence on the results insofar as due to Georgia's past, the collective mind is comparatively strong. Interestingly, most of the studies that are analyzed in the meta-study by Armitage & Conner (2001) were carried out in Western societies. The authors of the meta-study argue that the comparatively low influence of subjective norm can partly be attributed to the fact that many of the studies analyzed within the meta-study use single-item measures. Multiple-item measures on the other hand, result in a stronger relationship with intentions ($r = .38$ for multiple items vs. $r = .28$ for single item measures).[456] Yet when comparing the influences from the constructs attitude, subjective norm and perceived behavioral control with one another within the meta-study, it shows that the overall correlation of subjective norm with behavioral intention is .34 while attitude and behavioral intention correlate with .49 and perceived behavioral control and behavioral intention correlate with .43.[457] So no matter which kind of measurement was used for subjective norm, the effect of this component on intention is the weakest according to the meta-study. Returning to the thought from the experiment by Ybarra & Trafimow (1998), the cultural background of the studies that were included in the meta-analysis was examined.

[452] Cf.: Armitage & Conner 2001, p. 481.
[453] Cf.: Fishbein & Ajzen 2010, p. 190.
[454] Cf.: Armitage & Conner 2001, p. 481.
[455] Cf.: Ybarra & Trafimow 1998, p. 367.
[456] Cf.: Armitage & Conner 2001, p. 485.
[457] Cf.: Armitage & Conner 2001, p. 481.

Table 37: Number of articles per region

Region	Number of Articles	%
USA	53	32.7%
EU	50	30.9%
Canada	31	19.1%
Australia	7	4.3%
Asia	3	1.9%
Africa	2	1.2%
South America	1	0.6%
Caribbean	1	0.6%
Untraceable	14	8.6%
Total	162	100%

Note: USA = United States of America, EU = Europe. Source: Compiled by the author from Armitage & Conner (2001).

Having a closer look at the samples of the articles that were analyzed in the meta-study by Armitage & Conner (2001), it shows that many of the studies were conducted in Western societies. Table 37 shows that from the 162 articles, 87 % were conducted in large Western societies (namely USA, EU, Canada and Australia) while only 4 % worked with samples from regions like Asia, Africa, South America or the Caribbean (for 9 % of the studies the cultural background of the sample could not be traced).[458]

Georgia, on the other hand, is considered to be a collectivist culture, although it features individualistic characteristics such as e.g. pride or "an over-emphasized sense of personal dignity"[459] as well (also see Chapter 3.3). Ybarra & Trafimow (1998) themselves also conclude that since so many of the studies on attitude and subjective norm and their influence on intentions are carried out with Western students, "it is not surprising that attitudes usually receive greater weight than subjective norms."[460] The study at hand corroborates this finding by showing that also in the case of rural Georgian households, the application of the Theory of Planned Behavior results in a pronounced influence from the subjective norm component while the attitude construct fails to significantly influence intentions to enhance activities in the tourism sector (also see Chapter 6.3.4 for a discussion of the role of attitude). This finding is also in line with a study that compared German and Turkish teachers regarding the use of educational methods. While subjective norm had the largest influence in the case of Turkish teachers, it was low for the German teachers.[461] Liñán & Chen (2009) modeled subjective norm as a moderator for the influence of attitude and perceived behavioral control on entrepreneurial intention. Comparing Spain and Taiwan they found that for Taiwan subjective norm has a stronger influence on attitude and perceived control than for Spain, which leads to the assumption that less individualism brings about a stronger effect from the subjective norm component.[462] In an analysis of Russian data, Schmidt, Tatarko & Amerkhanova

[458] For a full list of all articles see the references marked with an asterisk in the references section in Armitage & Conner (2001, pp. 489–499).
[459] Surmanidze & Tsuladze 2008, p. 94.
[460] Ybarra & Trafimow 1998, p. 369.
[461] Cf.: Erten, Bamberg, Graf & Klee 2000.
[462] Cf.: Liñán & Chen 2009.

(2013) also examined entrepreneurial intention and found that for their application, subjective norm had no significant effect. They furthermore noticed that respondents from a more traditional region had a lower entrepreneurial intention compared to respondents from central Russia.[463] Altogether these findings from various studies show that different strengths of influences can emanate from the explanatory constructs attitude, subjective norm and perceived behavioral control, which confirms Fishbein & Ajzen (2010) when they say that relative weights are expected to vary across populations.[464] They also acknowledge that behavioral, normative and control beliefs are likely to differ depending on the target population and can therefore vary across cultures. In any case the beliefs serve as the foundation of the constructs, irrespective of the cultural background.[465] The analysis conducted here confirms that the theory can be applied in a collectivist culture as well and that beliefs give an insight into what lies behind the latent constructs. In the case at hand, intention to enhance or start working in tourism is most strongly explained by subjective norm, closely followed by perceived behavioral control, while attitude has no significant influence.

Unfortunately, a more differentiated analysis of the Theory of Planned Behavior for the regions is difficult due to the rather small sample and the high model complexity. However, the analysis of descriptive data and hypotheses on group differences provided some evidence of the fact that the two research regions are alike regarding various aspects. E.g., the households in Kazbegi show an equal amount of involvement in tourism as households in Borjomi and also the amount of different kinds of offers is similar. While the regions are comparatively similar, the process of data analysis showed that there are some significant differences between the main villages and the smaller villages instead of between the regions themselves. The share of households involved in tourism is larger in the main villages than in the smaller villages and also the numbers of offers made in the main villages are larger than in smaller villages. In order to test if there is a difference for the application of the model for subgroups such as smaller villages vs. main villages or also between regions, a larger sample is desirable in order to test a model as complex as the one presented here. In any case the fact that model fit for the sample as a whole is good shows that by and large, the tested factors and identified beliefs can be used to shed on light on what influences households in their intentions to start or enhances activities in the tourism sector.

6.3.2 Integrated Model

Since attitude did not have a significant influence on the intention to enhance work in the tourism supply, the extension of the model by adding underlying beliefs was focused on the constructs subjective norm and perceived behavioral control. Enhancing the basic model by also considering the **underlying causes** of subjective norm and perceived behavioral control (Fishbein & Ajzen call these “beliefs”), it is possible to not only analyze which factor influences the intention to enhance the tourism supply significantly, but also to determine starting points for interventions.[466] By targeting the significant beliefs, intentions – and via these behavior – can be influenced. The beliefs with significant influence on the latent constructs show underlying causes that lead to the respondent’s

[463] Cf.: Schmidt, Tatarko & Amerkhanova 2013.
[464] Fishbein & Ajzen 2010, p. 190.
[465] Cf.: Fishbein & Ajzen 2010, pp. 308f.
[466] Cf.: Fishbein & Ajzen 2010, p. 331.

perception of what people in the social surrounding think and what behavior is within their personal reach.

In the TPB, beliefs refer to very specific aspects that are causing and constitute the latent constructs. Underlying beliefs were modeled as formative indicators for both subjective norm and perceived behavioral control. The resulting model provided good model fit while the amount of variance in explained intention of enhancing activities in the tourism sector remained roughly the same (see Figure 18 and Figure 19). Since the addition of such causal indicators is not supposed to add to the explanatory power of the model,[467] it was not surprising to find equal amounts of explained variance in intention in both the basic and the integrated model. By showing what causes the latent factors that explain intention, the major gain from including beliefs is understanding which specific characteristics are important for the respective factor. Regarding **subjective norm**, the analysis provides empirical evidence of a pronounced importance of social referent groups in the close surrounding of the respondent. The model shows that the family by far has the largest effect on the construct subjective norm, followed by friends and neighbors. So the closer the family ties, the more important is the group. Very interesting to note is the fact that the government has no significant influence on the subjective norm, indicating that whether or not the government would allow the respondents to enhance tourism infrastructure is not characteristic of perceived social desirability. The pretest had already ruled out non-governmental organizations as a salient belief,[468] furthermore emphasizing that personal (family) relations are the ones that are important for people in Kazbegi and Borjomi when it comes to their business decisions regarding tourism. Institutions and organizations on the other hand, do not matter as a significant referent in this setting. The second latent factor that has a considerable significant influence on intentions to enhance tourism supply is **perceived behavioral control**. This construct is most strongly influenced by being able to get a loan from a bank, followed by feeling ill or tired. Consequently, respondents would feel more capable of enhancing their offers for tourists if they were able to get an affordable loan and it would help if there were some kind of mechanism to help in times of illness and tiredness. Other recorded factors such as unforeseen financial needs, problems with the time budget or finding workers do not significantly influence perceived capability of enhancing the tourism supply.

Unlike reflective measurements which are influenced by the latent factor, the formative indicators cause the latent factor. When comparing the constructs subjective norm and perceived behavioral control with one another, it shows that the **explained variance** that results from the measurement of the underlying beliefs is not quite but almost twice as high for subjective norm (R^2 =.71) than for perceived control (R^2 = .38). This shows that while the explained variance of the perceived control construct is within the recommended guideline for formative indicators,[469] a large amount of the variation of the construct is not explained by the measured beliefs, meaning that there are other aspects that explain perceived behavioral control that still need to be discovered. In the case of subjective norm, the analyzed social referents already account for a very large amount of the variation in the construct, thereby furthermore emphasizing the importance of the mentioned

[467] Cf.: Ajzen & Fishbein 1980, p. 90.
[468] Cf.: Volz 2011.
[469] Cf.: Weiber & Mühlhaus 2014, p. 266.

groups. In an analysis of three studies, East (1993) examined investment decisions of private people in Britain. He found that **family and friends** are important social referents and **access to funds** is important for perceived control. Comparing this with the study conducted here, one can see that a similar result was found for subjective norm. Interestingly, East also found **political parties** to have little influence, just as the government remained insignificant in the analysis of intentions to enhance tourism infrastructure. Investment decisions were positively influenced by good access to funds and a low level of effort needed for the application. Access to credits was found to have a significant influence on PBC in the current study. This shows that availability of financial resources is important for both studies.[470]

6.3.3 Moderation of Perceived Behavioral Control

Following recommendations by Yzer (2007, 2012), Chapter 3.2.3 introduced a proposed modification of the structural model of the Theory of Planned Behavior in which perceived behavioral control is said to moderate the **influence of attitude and subjective norm on intention**. This suggested moderation was tested by excluding the construct perceived behavioral control from the model and using the information from the variables of that construct to divide the sample into two groups. One group represents the households with a low amount of perceived control and the other group includes the households that are high in perceived control. By comparing the reduced model for both of these groups with each other, it is possible to see if the effects from both attitude and subjective norm on intention vary significantly between the two groups.

As a necessary precondition, it was possible to confirm metric invariance between the two groups which is required in order to be allowed to compare path coefficients of the same model across groups. However, neither scalar nor partial scalar invariance which would allow to compare latent construct means could be established.[471] Since metric invariance is sufficient to test Yzer's proposition, the analysis could be carried out. Looking at the statistical comparison of the relevant path coefficients from attitude and subjective norm to intention, the analysis does not reveal a significant difference between the groups. This means that when comparing households with a low amount of perceived behavioral control and households with a high amount of perceived control there is no significant difference in the way that attitude and subjective norm influence the intention to enhance activities in the tourism infrastructure.

Even though the current analysis could not confirm a moderating effect of perceived behavioral control, it should be noted that there are some **obstacles to the detection of such effects** due to methodological difficulties. It has been noted that when variance in the predictors is too little, significant influences are difficult to detect.[472] Comparing the distributions of the predictor variables to one another, it shows that the attitude construct shows a very skewed distribution while subjective norm and perceived behavioral control are more evenly spread out across all scale points. So it could be expected to at least find a significant group difference for subjective norm, but another possible difficulty is pointed out by Yzer (2012) himself: oftentimes the off-diagonal cells show only

[470] Cf.: East 1993, p. 367.
[471] Cf.: van de Schoot, Lugtig & Hox 2012, p. 486.
[472] Cf.: Fishbein & Ajzen 2010, p. 192.

small amounts of cases, which is typical of moderate to strong positive correlations, as they were also found in the case at hand. This reduces statistical power of the test and can on the other hand mean that a moderation effect could be detected if the sample size were larger and hence the statistical power were larger.[473] Especially for a test as this that compares groups with one another, the sub-sample sizes are rather small. It is therefore possible, that a moderating effect could be detected with a larger sample size and if the distribution of the variables showed more variance and also covered off-diagonal cells when correlating them.

6.3.4 Integration of Background Variable

According to the inventors of the Theory of Planned Behavior, it is possible for background factors or variables to indirectly influence behavior and intentions. Applications have tested for different kinds of background variables, often these variables are demographic variables,[474] but e.g. social or informational variables are possible as well.[475] However, Fishbein & Ajzen (2010) propose that background factors or variables generally have a mediated effect on intention and behavior and no direct influence.[476] Serving as a proxy for experience, the current investigation looked at the influence from the amount of offers made for tourists by the respondents on the intention to enhance or start such activities. Just as Fishbein & Ajzen assume, the analysis proved that there is no significant direct effect from experience on the intention to enhance the tourism supply, but a mediated effect via the constructs subjective norm and perceived behavioral control and via the family-belief. Since there is no significant direct effect of experience on intention, adding the variable experience to the model does not explain variance over and above the variance already explained by the latent constructs. The amount of explained variance in intention remains the same, thereby corroborating the fact that experience renders background information on what influences the perception of the social surrounding and believed capabilities while these are the constructs that actually explain intention.

Even though experience does not directly influence intentions to enhance households' activities, the fact that it significantly influences the two constructs that explain 70 % of the variance in intention shows that experience with the examined behavior helps understand an underlying cause for subjective norm and perceived control. One could also say that the more experience a household has in the tourism business, the more favorable are family and friends (i.e. the higher is the subjective norm) towards such activities and the more capable (i.e. the higher is the perceived behavioral control) a respondent feels to enhance touristic activities.

Of all the calculated models, only the one with experience as a background variable provides evidence for a significant influence of attitude on intention. A confirmatory factor analysis of the basic model showed that there is a highly significant correlation between attitude and intention ($b = .31$, $p = .000$), indicating that attitude and intention are in fact related. Attitude also correlates with subjective norm ($b = .55$, $p = 0.000$) and perceived behavioral control ($b = .28$, $p < 0.05$) which hints at

[473] Cf.: Yzer 2012, p. 113.
[474] Cf.: Leeuw, Valois, Morin & Schmidt 2014; Schmidt, Tatarko & Amerkhanova 2013.
[475] Cf.: Ajzen 2005, p. 135.
[476] Cf.: Fishbein & Ajzen 2010, p. 234.

multicollinearity among the explanatory factors. Particularly the shift in the algebraic sign from positive to negative for the bivariate zero-order correlation of attitude and intention compared to the regression of intention on attitude could be caused by multicollinearity and indicate a suppression effect. Suppression would mean that the effect from attitude on intention changes when the effects of other factors or variables are included in the calculation.[477]

Another possibility to use the information from the variable experience for this analysis would be to model it as a moderator similar to the way perceived behavioral control was modeled in Chapter 5.4.4. The integrated model could be compared for two groups: the households with experience versus the households without experience. Given that there are only few households that diversify their offers within the tourism branch it would be difficult to make a further differentiation and model more groups that distinguish some kind of amount of experience.[478] Although such a moderator analysis for experience is a viable option, it might be difficult to find a significant effect just like the moderation analysis of perceived behavioral control found no significant group difference (see the end of Chapter 6.3.3 for a discussion of possible reasons). The chosen mediation analysis, on the other hand, was able to provide information on the fact that experience has a positive influence on subjective norm, perceived behavioral control and the belief "family".

6.3.5 Methodological Issues

While the previous sections concentrated on the meaning of the results, the following explications will address some methodological issues that are relevant for a critical evaluation of the computations regarding the analysis of the Theory of Planned Behavior.

Readers familiar with structural equation modeling will have noticed that for the more complex variations of the model that follow the construction of the basic model, the **model fit p-value** of the global chi square test is significant[479]. This indicates that the modeled structure significantly deviates from the empirical structure of the data which is unwanted for structural equation models (SEMs). However, it is important to note that p-values can be biased in both directions if distributional assumptions are not met. This is also a problem in the case at hand. Kline (2011) furthermore points out that in the case of structural equation modeling, the logic of the reject-support mechanism is reversed in comparison to the more typical usage of rejecting insignificant results. In case of SEMs, the researcher is interested in finding a model that does not significantly differ from the empirical data, hence it is desirable to obtain an insignificant p-value. This also entails low power for the detection of correct hypotheses and may lead to the erroneous rejection of a true model if too much importance is given to the p-value.[480] Reporting the model fit p-value used to be a common practice in structural equation modeling, but lately more and more researchers refrain from doing so because of the mentioned reasons. Using a combination of different kinds of model fit indices allows the researcher to evaluate different aspects of model fit. Looking at inferential, descriptive and

[477] Cf.: Kraha, Turner, Nimon et al. 2012, p. 8; Darlington 1968, p. 179.
[478] These groups would have too few cases for some of the groups and the group sizes would be too different.
[479] I.e. below .05.
[480] Cf.: Kline 2011, p. 193.

incremental fit measures together, a more comprehensive picture on model fit is given.[481] Although the model fit p-value is above the recommended threshold for some of the calculated models, model fit values altogether are in the range of acceptable to good fit values. The overall assessment of the models is therefore that they give a valid theoretical structure to the empirical data. In order to test the quality of the p-values calculated with the AMOS full information maximum likelihood (FIML) estimator, **p-values of the model parameters** in the basic model were also computed using the robust maximum likelihood (RML) estimator in MPlus. The RML estimator calculates more accurate p-values when the data does not satisfy the criterion of normal distribution than the standard FIML estimation. P-values calculated with the RML estimator hardly differed from the ones using FIML in AMOS and did not lead to different results in terms of significant or insignificant model parameters. Even though the RML estimator may theoretically be the better option for estimating the model at hand, in practical terms it makes no difference for the current application. Therefore, analyses were carried on in AMOS because of its advantages in the visual display of models.

Throughout all analyzed models, it shows that the **attitude** component does not have a significant influence on intention for this application. Even when taking into account that Georgia is a collectivist culture[482] and the fact that normative control is generally stronger than attitudinal control in such cultures[483] (see Chapter 3.3), it is a little odd that the attitude of the respondent him- or herself does not have any influence on their intention to enhance activities in the tourism business. This result is somewhat counterintuitive and given that Armitage & Conner (2001) found an average influence of attitude on intention of .49, there is also empirical evidence supporting the attitude construct within the Theory of Planned Behavior (TPB). Fishbein & Ajzen (2010) point out a methodological difficulty regarding the detection of significant influences. If a predictor variable such as attitude shows little or even no variance because everyone agrees on the same side of the scale, influence from such a variable cannot be seen in a correlation or regression. In such a case, it is not possible to find a relationship between the variables even if there were one. Another reason for not being able to distinguish a significant influence are intercorrelated predictors. The significant influence from the stronger predictor may mask the influence from the weaker one.[484] The model with the background variable “experience” features a significant but negative regression coefficient of the effect of attitude on intention. This is an indication of multicollinearity and a suppressed effect that becomes apparent when another variable is incorporated into the model.[485] However, with an effect of -.13 this effect is not large. Furthermore, taking a closer look at the attitude construct, it shows that the distribution is extremely skewed. While neither attitude, nor subjective norm or perceived behavioral control show a normal distribution, the distributions of both subjective norm and perceived control are reasonably symmetrical, whereas the attitude construct is extremely left-skewed. Nonetheless, the variance of the attitude construct is larger than the variance of both subjective norm and perceived behavioral control and the values cover both ends of the scale. This renders the first argument made by Fishbein & Ajzen invalid for the case at hand. In order to investigate whether

[481] For an overview of common model fit criteria see Table 27.
[482] Cf.: Gelfand, Bhawuk, Nishii & Bechtold 2004, p. 469.
[483] Cf.: Ybarra & Trafimow 1998, p. 369.
[484] Cf.: Fishbein & Ajzen 2010, p. 192.
[485] Cf.: Darlington 1968, p. 179; Kraha, Turner, Nimon et al. 2012, p. 8.

there is a "masked" influence that was not apparent, they recommend looking at the zero-order correlations with intention. With .31, also the attitude construct shows a considerable significant correlation with the intention to enhance touristic offers. Although the strength of this coefficient is lower than for the correlations of subjective norm (.80) and perceived behavioral control (.74) with intention, the correlation shows that attitude and intention share some variance (see Table 26 for all zero-order correlations). Calculating separate structural equation models that only incorporate one of the three predictors shows that in the model using only attitude as a predictor, this construct has a significant influence on intention as well. But when comparing these three models with one another, it shows that the influence stemming from attitude is the lowest (.29; SN = .80; PBC = .74) and also explains the lowest amount of variance in intention by far (.09 for ATT; .63 for SN; .54 for PBC). This furthermore corroborates the finding that in the case of private households in the Caucasus, the attitude of the respondent towards enhancing tourism supply does not play an important role for the intention of doing so. There are also other studies in which attitude did not have a significant influence on intention. Carmack & Lewis-Moss (2009) for instance tested two models regarding condom use and did not find a significant influence from attitude on intention in either one of their models. In an analysis of 30 different kinds of behavior, Sheeran, Trafimow, Finlay & Norman (2002) found no significant influence from attitude on intentions to go to the cinema, go home (e.g. visit parents) and get at least seven hours' sleep.[486] However, for future investigations in similar contexts it is recommended to use alternative ways of measuring attitude in the target population. Compared to the variables for the other constructs, the attitude variables showed the highest amounts of missing cases which also resulted in a smaller amount of valid cases for the construct as a whole (ATT: n = 215; SN: n = 242; PBC: n = 244; INT: n = 244). It is possible that the semantic differentials that were used are ill-suited in this case. In any case, the amount of semantic differentials included in the questionnaire should be kept to a minimum instead of overstraining the respondents' willingness to participate by trying to find a more detailed differentiation of attitude. A shorter questionnaire can also increase data quality.

During the stages of model generation and testing, exploratory factor analyses (EFAs) were used to see if the theoretically proposed structure could be found with an exploratory approach as well. In the case of attitude and perceived behavioral control, the structure was confirmed. However, the discrimination between the factors intention and subjective norm is not good. It was not possible to obtain a solution that differentiated between the two factors without demanding two factors (when all SN and INT variables were included) or four factors (when all model variables were included). On the other hand, when manually asking for this number of factors, the items were allocated in the theoretically proposed way. Further investigation of **discriminant validity** does not give an unambiguous picture. A common method for analyzing discriminant validity is to compare a model where the correlation of the questionable two constructs is constrained to one with an unconstrained model.[487] When doing this for the case at hand, it shows that the constrained model is significantly worse than the unconstrained model. This supports the notion of two distinct factors, as

[486] Cf.: Sheeran, Trafimow, Finlay & Norman 2002, p. 259.
[487] Cf.: Weiber & Mühlhaus 2014, p. 164.

theoretically proposed.[488] The more conservative Fornell-Larcker criterion demands the squared correlation of two factors (i.e. their common variance) to be lower than the average variance extracted (AVE) for each single factor.[489] The data does not meet this stricter claim.[490] However, the fact that model fit is generally good supports the modeled structure, but it has to be kept in mind, that the discrimination between intention and subjective norm is not impeccable.

Whether or not the **direction of the relationships** is in the proposed way or the other way around cannot be tested empirically with the model. Chapter 3 and more specifically Subchapter 3.2 explained the theoretical considerations that underlie the proposed directions of relationships. Since intervention studies have successfully lead to a change in behavior, there is some indication that it is in fact possible to change behavior and/or intention by targeting the latent causes of behavior and intentions. Intervention studies are very common for health related issues. Epton, Norman, Dadzie et al. (2014) analyzed data on several health behaviors. They established reduced smoking rates among new university students after their intervention, but little effect was found on physical activity, fruit and vegetable intake and consumption of alcohol. In a meta-analysis of studies that aim at reducing heterosexual risk behaviors, Tyson, Covey & Rosenthal (2014) found the TPB to be useful for designing interventions to induce behavioral change. Initiating an intervention regarding the promotion of walking, Darker, French, Eves & Sniehotta (2010) managed to increase both intentions and behavior with mediated effects via perceived behavioral control. They conclude that their findings provide support for the proposed structure in the TPB.

6.4 Closing the Research Gap?

After having looked at the individual results from the analysis of the socio-economic living conditions and the analyses regarding behavioral intentions of enhancing touristic activities, this chapter will integrate the single results and establish a holistic picture of the situational conditions that shape the individual actions taken by households on the micro-level. According to Coleman (1990), inferences for the macro-level can be drawn from analyzing the individual behavior on the micro-level; the relationship between actor and behavior on the micro-level gives information on the relationship between societal phenomena on the macro-level (see Chapter 2.4 and Figure 5).[491] This chapter will review the gained insights, connect them to the research objectives of Chapter 2.4 and highlight the added value of the research. Chapter 2.4 identified the following main research questions:

1. How do private households carry out agricultural activities and how are they involved in the tourism sector? Are there differences between the research villages?
2. Which psychological determinant influences the behavioral intentions of the households in the research areas regarding an enhancement of their activities in the tourism sector the most?

[488] This was also tested for all other covariances. In each case, discriminant validity was supported.
[489] Cf.: Fornell & Larcker 1981.
[490] The Fornell-Larcker criterion also cannot be met for the correlation of INT with PBC and SN with PBC. For the remaining three correlations, the criterion is satisfied.
[491] Cf.: Coleman 1990.

3. Which fundamental aspects can be addressed to foster the intention to enhance tourism supply?

In order to answer the **first research question**, the data was analyzed in four groups. For each region, the main village was analyzed as one group (i.e. Stepantsminda for Kazbegi and Bakuriani for Borjomi) and for each region the smaller villages were summed up into one group (i.e. Kazbegi villages and Borjomi villages). Detailed figures and results on socio-economic characteristics of the sample can be found in Chapter 5.3, the following table gives a very brief summary of the basic results from the analysis.

Table 38: Overview of involvement in agricultural production and touristic activities for analyzed groups

	Stepantsminda	**Kazbegi villages**	**Bakuriani**	**Borjomi villages**
Agricultural production	+ (few animals and little animal products, potatoes)	++ (both animals and products, many households with potatoes)	-- (hardly any animals and products, few households with potatoes)	- (some animals and animal products, few households with potatoes)
Touristic activities	++	-	++	--
Diversification (involvement in agriculture and tourism)	++	-	++	--
Average income	+	--	++	-
Second most important source of income*	Wage empl. outside agr. & tourism	Self-empl. agr.	Self-empl. tourism	Self-empl. agr.
Overall assessment	**→ stronger in tourism than in agriculture with higher income**	**→ strongest in agriculture but lowest income**	**→ strongest in tourism and highest income**	**→ weak in both sectors with low income**

Note: * Pensions were mentioned most often in all groups; empl. = employment; agr. = agriculture. Source: Own data.

It should be kept in mind that all assessments made within the table are relative classifications that need to be evaluated in comparison with the other three analyzed groups. E.g. the average income is highest in Bakuriani, however, this value is still low when compared to Georgia as a whole. The table shows that the two main villages are the strongest group in the tourism sector. Both groups from the Kazbegi region are stronger in agricultural activities than the groups from Borjomi. This might be connected to the landscape that shows more wooded areas in Borjomi than in Kazbegi. On the other hand, while there are no milk processing facilities in the Kazbegi region, such facilities can be found in the Borjomi region. Nevertheless, cows are owned more frequently in the two groups from the Kazbegi region than in the two groups from the Borjomi region. It is remarkable that the group of households from Borjomi villages is weak in both agriculture and tourism. This group also features the lowest income of all groups. Diversification of activities in agriculture and tourism is mostly

visible in the main villages Stepantsminda and Bakuriani since these are also the groups that have the largest amount of activities in tourism in general. One exception is the village Juta in Kazbegi that also attracts tourists (mostly backpackers). This data shows the currently carried out activities of the households, however, it is beyond the scope of this work to determine whether or not households could be more active in these fields. Agricultural activities may be limited by available land and monetary means to provide for animals the same as touristic activities can be limited by available manpower and once again financial assets. The quantitative data from the household survey shows the situational conditions that are the prerequisite for individual action. The following figure was derived from Figure 5 which showed how Coleman's boat can be used to relate macro-level conditions and outcomes to situational conditions and individual action on the micro-level.[492] It demonstrates that both the quantitative data and the analysis of behavioral intentions take place on the micro-level.

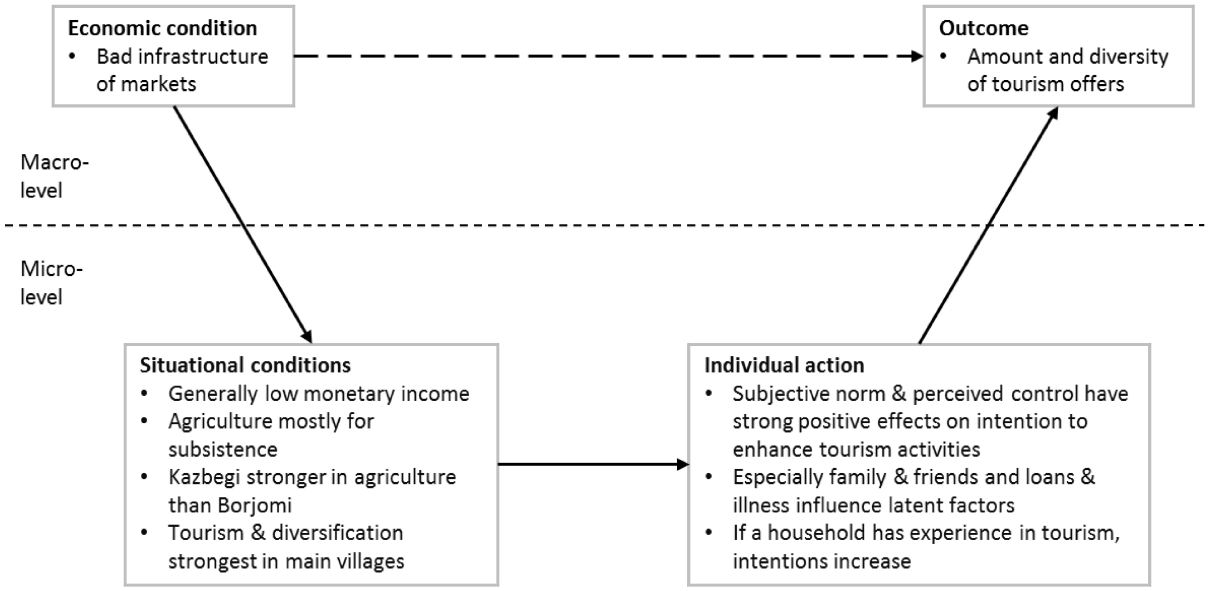


Figure 26: Coleman's boat with results from quantitative survey and analysis of intentions
Source: Modified from Coleman (1990, p. 401).

Shaping the setting of overall activities to be taken by households, the quantitative data indicates that households have very limited assets due to little monetary income. They try to compensate this by producing their own agricultural products, but this mostly takes place on a small scale and is largely used for subsistence purposes. The importance of subsistence was also found in other studies.[493] However, making investments in order to start or enhance activities in the tourism sector is very difficult for most of the households. Furthermore, the fact that most smaller villages have few households that are active in the tourism sector seems to indicate that tourism is not an option in each of the analyzed villages. It has to be noted that the respondents in the village Kanobi (Kazbegi region) all refused to answer the items for the Theory of Planned Behavior, because in their case, tourism is not an option.

[492] Cf.: Coleman 1990.
[493] Cf.: Kötschau, Sepashvili & Narimanidze 2009; Kegel 2003.

The **second research question** asked which psychological construct influences the behavioral intentions to enhance or start activities in the tourism sector the most. The analysis showed that subjective norm has the largest standardized effect of all predictors. The individual action of enhancing or starting to work in the tourism branch largely depends on whether or not important others such as family members and friends approve of doing so. This factor was closely followed by perceived behavioral control which also exerted a considerable influence on intention. The attitude of the respondent, on the other hand, did not show a significant influence on intentions to enhance tourism supply. As was elaborated in Chapter 3.3, the collectivist culture influences the application of the theory as a macro-level context factor. This assumption was also corroborated by taking a closer look at the studies included in the meta-study by Armitage & Conner (2001) in Chapter 6.3.1.

The **third research question** addressed fundamental aspects such as the underlying foundation of the latent constructs that can be targeted in interventions to induce behavioral change.[494] In order to make it easier for private households to engage in expanding their work into the sector of tourism, several starting points were identified. Following the direction of causality that is proposed by the Theory of Planned Behavior (see Figure 7), targeting the behavioral, normative and control beliefs will change the latent constructs that in turn influence intention. In other words, by creating a positively shaped social surrounding that supports the enhancement of tourism supply by the respondent, the subjective norm construct will altogether receive a more positive value that leads to a higher intention to carry out this activity. The same is true for perceived behavioral control. The better the chances and possibilities of receiving affordable bank loans and knowing that reliable help mechanisms are installed in case of illness and being tired (keeping in mind that there are often elderly persons in the households), the more positive the value for perceived control and the higher the perceived control, the more likely are households to develop an intention to start or enhance tourism. Another aspect that can be tackled is the experience already made in the tourism sector. The analysis of mediational effects showed that experience has a significant mediated effect on intention. So if households that are not (yet) involved in tourism received the opportunity to gather first practical experiences in the field (see Chapter 7), their intentions to work in the tourism business would rise because experience has a positive effect on subjective norm and perceived behavioral control.

Another very interesting analysis would be a comparison of the two regions. Even though it has been argued and shown by the descriptive statistics that the research areas are similar regarding some characteristics, they also differ regarding others, for example, structural conditions. It is therefore reasonable to assume that the modeled relationships may differ likewise. A differentiated analysis to examine the discrepancies between the groups would be good. Such an analysis should also differentiate between the main villages of each region and the smaller villages. This could show whether the relationships found in the present study are the same for both regions as well as possibly render additional detailed implications that can translate into more specific recommendations. Although such an examination is desirable, there is a problem with such an analysis. Group comparisons are difficult to carry out with groups that considerably differ in sample

[494] Cf.: Fishbein & Ajzen 2010, p. 331.

size. Even if there is roughly the same amount of cases for each region, looking at the smaller villages in comparison to the main villages presents with complications. Since the sample size is already rather small, comparisons are difficult to carry out and are likely to render parameters that are not robust.[495]

[495] Cf.: Weiber & Mühlhaus 2014, p. 305.

7 Conclusions & Implications

Throughout the entire dissertation, two key aspects have been followed. First, the importance of agriculture as a means of subsistence living has been shown by describing the status quo in two rural regions of Georgia and by analyzing the socio-economic living conditions of the population in the study areas. Second, since tourism is an auspicious sector, the Theory of Planned Behavior was used to provide a bridge between societal (background) factors and individual behavior[496] analogous to the actor's hypothesis in Coleman's boat that links the actor with his or her situational conditions to the individual action (see Figure 5).[497] This final chapter will sum up findings from both steps of the analysis and integrate them to arrive at some practical recommendations.

7.1 Tourism as a (Comparatively) New Perspective

The economic conditions in Georgia as a whole and within the research areas in particular are severe. Subsistence living remains a daily occupation for a large part of the Georgian population while inequality between the rich and the poor increases annually.[498] The lack of economic perspectives within remote areas characterized by subsistence agriculture entices young people to leave these areas in search of employment opportunities in larger cities[499] (see Chapters 2.1 and 2.2). The analysis of the household data from the survey in 2011 substantiates the fact that most of the households in the two research areas in Kazbegi and Borjomi use a very large amount of their own agricultural production for their personal consumption rather than for commercial income (see Chapter 5.3.4). This raises the question of whether there are employment possibilities other than subsistence farming. One such possibility is the tourism sector. The analysis conducted here helps to understand the underlying factors which influence private households to be (or become) active in this field. By determining influential aspects, this research shows starting points which can increase the willingness of respondents to put effort into this entrepreneurial endeavor. These starting points rely on subjective assessments by people from the research areas, primarily due to the underlying assumption that in order to reach a change of behavior, people need to develop a personal intention of doing so.

Tourism is admittedly not totally new in Kazbegi and Borjomi. Both research areas were already frequented by tourists in soviet times.[500] However, the way that tourism was organized in the planned economy of the Georgian Soviet Socialist Republic (GSSR) differs from the way it is done today and compared to the longstanding tradition of animal husbandry[501], tourism can be considered a modern trend. As Chapter 2.2 showed, both regions offer potential as holiday destinations and have recently received growing numbers of tourists.[502] The analysis of behavioral intentions regarding an enhancement of touristic activities of rural Georgian households with the Theory of

[496] Cf.: Fishbein & Ajzen 2010, p. 249.
[497] Cf.: Coleman 1990.
[498] Cf.: Bertelsmann Stiftung 2014, p. 41.
[499] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2012, p. 24.
[500] Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, pp. 25f.; Georgian-Voyge 2014-2015.
[501] Cf.: Didebulidze & Plachter 2002, p. 91.
[502] Cf.: United States Agency for International Development (USAID) 2012b, p. 6; Borjomi Municipal Working Group 2008, pp. 11f.

Planned Behavior (TPB, Ajzen 1985, see Chapter 5.4) provides crucial results that have implications for policy makers and non-governmental organizations (NGOs) who are active in the region. According to the TPB, attitude, subjective norm and perceived behavioral control are the three factors that explain an intention to perform a certain behavior, in this case an enhancement of activities in the tourism sector (see Chapter 3.2 for detailed information on the theoretical background of the TPB). It shows that the key constructs in explaining behavioral intentions for the sampled households are subjective norm and perceived behavioral control. While it is generally considered difficult to achieve a change in a construct such as attitude because attitude is rather stable over time, it is recommended to design interventions to change the underlying beliefs of attitudes or also the other explanatory constructs in the Theory of Planned Behavior, depending on which of these has the strongest effect on intention.[503] According to the research findings from the present analysis, I strongly suggest designing programs and interventions which do not only target the individual but take into account the social surrounding as well. In other words, in order to be successful, it is necessary to create acceptance on a broader basis than just trying to influence the decision maker of a household. This could mean e.g. designing actions for close family members that create awareness and understanding of the benefits and costs of entering the tourism sector. Or in the case of neighbors, it might be beneficial to persuade them that more tourists in their vicinity could also open up new sales opportunities for them, if e.g. the household involved in tourism bought his or her products to provide local food for the tourists or even the tourists themselves could buy homemade products. The data showed that the government, on the other hand, is not important for intentions concerning an enhancement of the tourism supply. Nevertheless, the government (and more specifically the Ministry of Economic Development and the Ministry of Environmental Protection and Natural Resources[504]) can influence general and economic conditions of households on the macro-level and thereby change the setting in which the respondents operate. Since it was found that perceived behavioral control is significantly influenced by being able to get a loan, the government could e.g. foster reasonable conditions through support programs for rural areas. One of the respondents pointed out that although loans are generally available, they are oftentimes not affordable for most of the people. It is therefore important to create an environment with e.g. reasonable micro-credits and repayment options for private households making initial investments. Another possibility is that the people are not fully aware of their financial options and how credits operate. It could therefore also be helpful to provide them with information on which kinds of credits are available and how to work with them. Furthermore, some kind of help-system could be installed to cover times of illness or overexertion. People who do not have their own business could be part of this help-system to jump in if someone needs support. Once again, the importance of what the family thinks the respondent should do becomes evident since it has an influence on perceived control above and beyond the correlation between the constructs subjective norm and perceived behavioral control themselves. So also in this case, the social surrounding should be included in measures taken to strengthen perceived behavioral control.

[503] Cf.: Ajzen n.d.a, p. 5.
[504] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, p. 36.

A differentiated analysis of the influence of perceived behavioral control tested whether the influence from attitude and subjective norm on the intention to enhance the tourism supply differs depending on the amount of perceived control.[505] However, the amount of perceived control over enhancing touristic activities does not change the way that the personal attitude of the respondent and subjective norm from important others influence the intention. Despite the fact that this moderation effect was not confirmed, perceived behavioral control plays an important role within the model as a whole. The empirical data emphasizes how important it is that respondents feel capable of enhancing their tourism supply in order to reach the intention to do so.

The analysis also indicated that experience in the tourism sector leads to a higher likelihood of a high intention to develop touristic activities. Since experience has a mediated effect that is carried on to intention via subjective norm, perceived behavioral control and the belief "family", launching programs which allow people to experience working in the tourism sector personally is likely to increase all these three aspects simultaneously. So if a household were able to gather firsthand experience in the tourism business, the more favorable would be the perception of what family and friends think about such activities and the more capable would a person feel to enhance touristic activities. In this way, experience is in itself a context variable because it determines the setting for the formation of the psychological factors. Such experience could e.g. be provided by supplying a person with profound knowledge on touristic sites that enables the person to serve as a guide or by enabling a household to enlarge their home so that they can accommodate guests. This suggestion shows that the identified starting points for interventions go hand in hand with each other: enabling a household to renovate their properties for the purpose of guest accommodation requires financial assets which could be provided by a reasonable micro-credit. By shaping the circumstances for action, experience establishes the framework for the individual behavior. I also recommend combining such opportunities for gathering experience with targeted programs that include the social environment such as family and friends to include the entire social framework.

The recommendations so far address starting points for interventions identified by the analysis of underlying beliefs through the application of the Theory of Planned Behavior. These are directed at increasing the intention of the private households to become active, or to enhance activities in the tourism sector. However, there are further aspects worth improving in order to foster the development of tourism as a source of income for the local population. Aside from unfavorable loan conditions for private persons, the conditions for investing in tourism should also be improved for larger investors, in light of the fact that unsustainable tax regulations discourage investments. When larger investors become active or if the government e.g. invests in projects to improve infrastructure such as roads, waste collection or clean public restrooms, other jobs are also created in the process. Also demand for souvenirs and other homemade crafts is likely to increase. In many cases, the quality of delivered services is presently at a low level. Particularly to attract tourists with high income, it is necessary to improve the quality of rendered services and to train qualified personnel,

[505] Cf.: Yzer 2007.

preferably multilingual.[506] A rating system for services and accommodations could also help tourists to find out where to find the quality standards they are looking for.

Generally, it is advisable to stress the unique features of the regions and of single villages in order to make tourists aware of these highlights. Tsagveri (Borjomi region), e.g., has an old train station with a historic railway and is close to both the town of Borjomi and Bakuriani which are known for mineral springs and pleasant climate. Sno (Kazbegi region) is the hometown of the Georgian patriarch and frequently visited because of this fact. Juta is interesting for people interested in hiking and tenting in the mountains. Highlighting such features and using them for advertisements could draw more tourists to the villages.

7.2 Between Tourism and Agriculture

Although tourism is an auspicious sector in both research areas, it is quite obvious that working in this sector is not a solution for every household. The demand for tourist services is limited by the number of tourists. A respondent in Bakuriani reported that there are more rooms than guests because many larger hotels were built in the recent past. On the other hand tourism can entail demand in other areas such as food products, entertainment, transportation and souvenirs which open up other perspectives of employment opportunities and attractive offers in the tourism sector could also increase the number of tourists and therefore demand for touristic offers. Involvement in tourism can be found in all of the analyzed groups (two main villages and two groups of smaller villages), but with a varying degree. The main villages Stepantsminda and Bakuriani show a higher share of households that offer touristic services and they also offer a greater variety of services, but it has to be kept in mind that tourism is not always an option. Especially in the smaller villages, tourism as a local business hardly becomes viable. When looking at the smaller villages one by one, it shows that no household from the villages Kanobi (Kazbegi region) and Didi Mitarbi (Borjomi region) mentioned any activities in the field of tourism.[507] So while tourism is an option for diversifying household income in the main villages, the smaller villages offer less potential. Results of Kan, Kimhi & Lerman (2006) show that while farm output has a positive effect on market participation, non-farm income decreases market participation.[508] According to these findings households which start to become active in tourism are likely to reduce their farming production which reduces the number of households selling agricultural products. The sample at hand only had few households that sell their produce, but it is also possible that households reduce their agricultural production and buy more products when income from touristic activities increases. This can in turn mean that households continuing to sell local farm products could receive more customers than previously. At the same time it remains questionable if agriculture can gain importance as a source of monetary income since the infrastructure is not suitable for processing agricultural products and since selling products is

[506] Cf.: Erkomaishvili, Gvelesiani, Kharaishvili & Chavleishvili 2014, pp. 179f.; United States Agency for International Development (USAID) 2012b, p. 22.

[507] The secluded location of the village Kanobi prevents tourists from coming to this village and compared to Juta, which is even more secluded, Kanobi lacks the unique scenery that attracts tourists. According to census data (National Statistics Office of Georgia (GeoStat) 2013c) Didi Mitarbi is the smallest village in the survey and it lacks tourist attractions.

[508] Cf.: Kan, Kimhi & Lerman 2006, p. 2.

difficult due to cheaper imported products from e.g. Turkey, Azerbaijan and Ukraine.[509] The foreign trade regime in Georgia is considered to be comparatively liberal with low import duties and simple custom procedures.[510] Imported goods are often goods that are also produced in Georgia, such as meat, dairy and vegetables. These products come from Brazil, Canada, the United States and also India.[511] Therefore, tightening the regulations for products that are imported into Georgia would strengthen the domestic market and make agricultural activities more profitable.[512] More than ten years ago, Schulze, Tillack & Mosashvili (2003) conducted an analysis on the economic situation of Georgian farmers. They recommended supporting the agricultural sector by creating cooperatives similar to Raiffeisen and through activities such as government sponsored social benefits, since such measures also helped Western Europe to overcome poverty in rural regions during the last century. Subsidies or cheap credits in order to buy pesticides could be a hands-on tool to foster agricultural activities. Furthermore the author also thinks that it is important to create employment opportunities outside the agricultural sector, which strengthens the argument for diversifying income sources and for considering other sectors such as tourism. According to Schulze, Tillack & Mosashvili (2003) fostering production conditions only makes sense if there is demand for such products.[513] This demonstrates that both the agricultural and the touristic sectors intertwine. Increasing numbers of tourists can also lead to an increasing demand for food products in both regions. Since there is little industrial potential, the Bertelsmann Stiftung has acknowledged that Georgia's agricultural sector possesses good opportunities for the production of organically grown goods and tourism is specifically mentioned as an alternative within the service sector.[514]

7.3 Agriculture as a Supplement and Proven Safety Net[515]

Although agricultural potential in the research areas is limited, the fact that so many households are active in this sector in one way or another emphasizes the importance agriculture still has today (see Chapters 5.3.2 through 5.3.4). In both study regions, respondents told the interviewers that they barter for food products with neighbors, family members and friends. Kegel (2003) also reports that workers are paid in kind and that households sometimes give large amounts of their production to relatives and friends, particularly during harvest time.[516] So even if households do not sell, it is possible that they use their production to swap products or to pay their workers. The previous paragraph outlined some of the difficulties that agricultural producers in Georgia are faced with. Since agriculture remains an important sector, it is recommended to take measures in order to support agricultural producers. The World Bank confirmed this in a report from 2011 where it emphasized that poverty incidence is significantly higher in rural areas than in urban areas and this gap had even increased after the Rose Revolution in 2003. The report recommended improving both

[509] Cf.: Germany Trade and Invest 2014, p. 3.
[510] Cf.: Bertelsmann Stiftung 2014, p. 20.
[511] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 36.
[512] This argument is also made by Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 6.
[513] Cf.: Schulze, Tillack & Mosashvili 2003, pp. 48f.
[514] Cf.: Bertelsmann Stiftung 2012, p. 40.
[515] Cf.: The term „safety net" was introduced in this context by Kötschau, Sepashvili & Narimanidze 2009 who wrote an article with the suitable title "Agriculture in Georgia – Commercial Sector or Social Safety Net?".
[516] Cf.: Kegel 2003, p. 152.

profitability and productivity of the agricultural sector.[517] Therefore, aside from establishing favorable sales conditions by levying higher taxes on imported goods and by establishing cooperatives, households can also be helped by improving their production capabilities. The households in the research areas often lack the resources to provide the necessary economic parameters for intensive farming, which in turn can only produce low outputs. The Cooperative for Assistance and Relief Everywhere International (CARE) (2010) also sees this as a general problem of agricultural communities in Georgia: there is a lack of physical, knowledge-based and financial resources. This refers to such initial assets as quality seed, fertilizer and pesticides. In addition agricultural machinery is often not available. And similar to activities in the tourism sector, financial credits could help to provide for these necessary investments. The fragmented structure of small land plots which was also found in the sample furthermore impedes productivity. Although the land reform that caused this fragmentation had good intentions and wanted to enable households to provide for themselves by cultivating plants for subsistence use, the high level of fragmentation hampers mechanization and infrastructures such as irrigation.[518] The current distribution of land plots is not appropriate for today's needs. At the same time disputes of ownership and/or difficulties with the exact geographical position of plots make it difficult to sell or buy land. Instead of small, fragmented land plots it would be desirable to create larger, connected plots that can be cultivated all at once. Households which hardly use their plots could also benefit from selling their land and use the money received for investments in other branches, e.g. tourism.

The two research regions show a similar tendency: in both cases, the main villages (i.e. Stepantsminda and Bakuriani) show the largest shares of households active in the tourism sector. The smaller villages, on the other hand, rely on agriculture more strongly. The subsamples from Kanobi (Kazbegi region) and Didi Mitarbi (Borjomi region) do not feature a single household active in tourism. Kanobi is rather secluded, making tourism an unlikely business branch and Didi Mitarbi lacks attractions that would appeal to tourists. Compared to the other villages, Didi Mitarbi has the second largest amount of children per household, but inhabitants report that villagers have recently left the village. Being the smallest village in the survey with a population of 48 inhabitants[519], it is possible that such villages will become extinct. In order to prevent further depopulation from these and similar villages, provision of infrastructure regarding various aspects has to be ensured. Such infrastructure should e.g. include schools, health care and job opportunities which take into account local business branches such as selling timber or production of mineral water in Borjomi. Oftentimes the conditions for agricultural activities are bad and productivity is hampered.[520] Households should be supported, e.g. by cooperatives. Mleta is a bit exotic within the sampled villages since it is the only village from the group of the Kazbegi region that is reached before crossing the mountain pass when traveling to Stepantsminda or Russia from Tbilisi. It is also very close to South Ossetia. There is very little touristic activities from households in Mleta, combined with agricultural activities on steep slopes. The villages Tsikhisjvari and Bakurianis Andeziti (both Borjomi region) show some activities in the tourism sector, but tourism is not very profitable here because they lack attractions and since

[517] Cf.: World Bank 2011, p. 11.
[518] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 15.
[519] Cf.: National Statistics Office of Georgia (GeoStat) 2013c.
[520] Cf.: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) 2013, p. 14.

there are more attractive places such as Bakuriani or Borjomi nearby they will probably not be able to increase the numbers of visitors significantly. Like the villages Kanobi, Didi Mitarbi and Mleta, other options need to be explored. Cooperatives could help making better use of agricultural potential.

Despite the many difficulties of the agricultural sector, there are also positive developments. Germany Trade and Invest (2014) reports that the economic approach towards Russia since 2013 and the free trade agreement with the EU which was signed in June 2014 can promote international trade. Moreover, the new government is actively fostering the agricultural sector by installing drainage systems, supporting the development of cooperatives, opening of consulting centers and support of smallholders through vouchers.[521] However, these activities mostly concentrate on the lowlands of Georgia, but such instruments also need to be utilized in remote mountainous areas such as Kazbegi and Borjomi. Georgia's Ministry of Agriculture should keep an eye on remote regions as well. Unfortunately, local governments lack legal responsibilities and only have little financial autonomy.[522] Extending services and infrastructure to mountainous regions is important to ensure the livelihoods of the inhabitants of these areas and to discourage migration to the capital and the few other large cities. Enhancing the scope of action of the local governments would allow them to react to the needs of their municipalities.

7.4 Current (Societal Pre-) Conditions for Future Development

After these more practical, hands-on recommendations I want to get back to a point that is connected to the results of the analysis of the behavioral intentions of the private households regarding an enhancement of activities in the tourism sector. The application of the Theory of Planned Behavior identified starting points for interventions that can help to increase behavioral intentions of private households to venture into the tourism sector as an additional source of income. It was shown that the social surrounding such as family and friends have the largest influence on the intention to become active in tourism (see Chapter 5.4). This finding was also evaluated in light of the collectivistic nature that characterizes the Georgian society (Chapter 6.3.1), a feature which in and of itself has further implications. Along with many other characteristics, Gelfand, Bhawuk, Nishii & Bechtold (2004) considered social interaction patterns in both cultures with high scores on collectivism and cultures with high scores on individualism. They found that group activities are more likely to be found in collectivistic cultures.[523] Future activities that incorporate group activities could receive broader acceptance than one-person activities. It should be kept in mind, though, that although collectivist cultures put strong emphasis on **group cohesion**, this is much more the case for in-group than for out-group members. And this is the crux of the matter. The definition of who belongs to the in-group and who belongs to the out-group is an individual issue and also depends on the context. Opposed to foreigners from other countries or also Georgians from other regions, the in-group in the research areas contains all inhabitants of that area. But when it comes to starting a new business to increase personal income, the in-group might only include someone's family members or maybe only members of the person's household because everyone

[521] Cf.: Germany Trade and Invest 2014, pp. 3, 1 and 7.
[522] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, pp. 21f.
[523] Cf.: Gelfand, Bhawuk, Nishii & Bechtold 2004, p. 452.

else is a possible competitor. So in order to address social aggregates, a thorough investigation of group structures is necessary.

Sources also report that Georgia has very **poor social capital**. Especially regarding institutionalized ways, social capital remains poorly developed which is also demonstrated in e.g. "the failure of farmers to act collectively in buying and selling".[524] Difficulties to organize and maintain themselves also occur for civil societal organizations (CSO). The Cooperative for Assistance and Relief Everywhere International (CARE) (2010) reports that a major difficulty for CSOs is the lack of funds. On the other hand, depending on foreign financing often means that international organizations are involved. These are mostly run top-down and fail to relate to the local populations and their needs. They also lack sustainability because once the funding elapses, these often cease to exist. This in turn impedes the development of long-term visions.[525] Cooperation with donor organizations and institutionalized offers is hampered by the poorly developed social capital as well. Georgian communities generally do not trust people outside family and close friends. This is also expressed in the fact that Georgians mostly turn to relatives, neighbors and friends (in that order) and on the other hand, 88 %, 86 % and 84 % would never turn to the central government, NGOs or a bank respectively. Especially when money is involved, Georgians do not easily trust people, even if they come from within their community.[526] It also seems as if Georgians underestimate the importance and effective force that cooperatives and other forms of support groups can have.[527] Furthermore, it has to be kept in mind that both NGOs and CSOs lack the population's trust since they have often provided ineffective services.[528] Janowski (2003) observed another important aspect: Given the fact that Georgia was part of the Soviet Union for 70 years, the population is not used to being responsible for their own livelihoods. They expect the state to come and take action on their behalf, telling them what to do and to provide them with employment opportunities.[529] But in Georgia in general and in the research areas in particular, people need to be proactive in order push for the development of their region and for their own future. The Bertelsmann Stiftung (2014) also points out that since Georgia is located at an important crossroads of vital energy transport lines and since Georgia enjoys a well-educated labor force, there is "potential to catalyze economic development."[530] Although the **education level** in Georgia is generally high, the training that people have received is mostly specific, professional education instead of managerial knowledge on how to start and maintain a business. Also among many of the highly educated people, the attitude of waiting for someone to come and tell them what to do is prevalent. However, the probability that people with higher education who return from cities will start small businesses is comparatively higher than that of other villagers. Conditions for entrepreneurs are furthermore exacerbated by a negative attitude towards entrepreneurs in general and specifically towards purely profit-oriented entrepreneurs.[531] Another

[524] Caucasus Research Resource Center (CRRC) 2011, p. 2.
[525] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 24.
[526] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 23.
[527] Cf.: Schulze, Tillack & Mosashvili 2003, p. 49.
[528] Cf.: Bertelsmann Stiftung 2014, p. 30.
[529] Cf.: Janowski 2003, p. 4.
[530] Bertelsmann Stiftung 2014, p. 30.
[531] Cf.: Janowski 2003, p. 14.

fact that is detrimental to the development of new businesses is the **ageing of the population** which is especially prevalent in mountainous areas. The survey data from Kazbegi and Borjomi shows that there are many households with elderly family members (Table 3) who cannot be involved in new business ventures as actively as younger people. The younger, more productive people, on the other hand, tend to leave because of a lack of perspectives.[532]

7.5 A Change for the Better?

The recommendations made here are nothing new, they rather corroborate aspects that others have highlighted before. The United States Agency for International Development (USAID) (2012b), for instance, recommends "a combination of technical assistance, trainings and financial assistance [… to …] foster development of local businesses and facilitate tourism development in the municipality."[533] This relates to issues that were addressed in this final chapter. What makes these recommendations unique is the focus on the local rural population and their personal needs and requirements in order to encourage and strengthen them to use their own potential to its fullest. Particularly in light of the societal conditions that were summarized in the previous paragraph, the chosen approach used a valuable method to gain deeper insight into what influences rural Georgian households when it comes to starting or enhancing entrepreneurial efforts in the tourism sector.

Most of the suggested starting points for action address NGOs, CSOs or political bodies such as the local or the central government and relevant ministries such as the Ministry of Environmental Protection and Natural Resources, the Ministry of Economic Development and the Ministry of Agriculture[534]. Even if these actors can help provide beneficial structures for business development and good opportunities for income generation, the people themselves also need to put (more) effort into the future development of their own livelihoods and their home regions in order to initiate a change for the better. As Chapter 7.4 pointed out, Georgians have developed a tendency of expecting someone else to come and lead the way. But in today's world, a more proactive demeanor is imperative. Moreover, individuals would hardly ever turn to the central government, NGOs or banks for help.[535] This attitude of rejecting opportunities of assistance needs to be reconsidered; people need to take matters into their own hands. The analysis of the data from villages of the two mountainous regions Kazbegi and Borjomi has furthermore revealed that although the regions bear certain similarities, a difference can be seen between the two main villages of each region and the smaller villages within the regions. There are generally fewer activities in the tourism sector in the smaller villages. While some villages may gain benefit from tourists passing through, there is one village in particular that does not receive any tourists. At the same time, the income in the smaller villages is even lower than in the main villages, meaning that the inhabitants are in need of additional income. However, there are fewer households involved in tourism in these villages because the villages themselves do not have the potential for more tourists. So while tourism is an option in the main villages and also for some of the smaller villages that are characterized by unique features which make them attractive as a holiday destination, some of the villages in the survey need other

[532] Cf.: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, p. 31.
[533] United States Agency for International Development (USAID) 2012b, p. 22.
[534] Cf.: Transboundary Joint Secretariat for the Southern Caucasus (TJS) 2009, p. 36.
[535] Cf: Cooperative for Assistance and Relief Everywhere International (CARE) 2010, pp. 23f.

options. In this regard it has to be kept in mind that not every village will persist in the long run, but also the smaller villages would profit from an enhanced demand for agricultural products and could focus on supplying the main villages with local food products.

Tourism can serve as an additional source of income for private households in both Kazbegi and Borjomi. It was shown that in order to foster this development, policies and NGOs should take the strong social bonds of households into account by targeting, for example, not only the individual, but also the social aggregate. Furthermore, perceived control could be increased by guaranteeing reliable loans and having safeguards in place for times of illness. These practical implications from the research give a starting point for alleviating the conditions for private households to become entrepreneurially active. These conditions refer to very hands-on matters such as affordable credits and help-systems, but also to more subtle matters such as the fact that social ties are very strong and often a whole network of people needs to be persuaded in order to increase the chances of behavioral change. A lot is on the move in Georgia and positive development can be seen all over the country. However, all of the recommendations made here need to be considered in a broader perspective that takes the current societal conditions in Georgia into account. As the previous paragraphs of this final chapter have outlined, agriculture remains an important sector. Thus conditions for productivity and profitability of agricultural activities should be fostered alongside with actions taken to enable households to be or become active in the tourism sector. Supporting both the tourism and the agricultural sector instead of relying on one sector is more favorable because it diversifies the income sources that households rely on and thereby spreads the risk of income loss if one sector faces difficulties. It is not the aim of this work to argue in favor of either one the sectors, rather this is an attempt to analyze which factors influence private households in their intention to become active or continue their activities in the tourism sector while taking into account activities in the agricultural sector. To improve the living conditions of the rural population in the Kazbegi and the Borjomi region and thereby induce a change for the better, both the agricultural and the tourism sector will play an important role in the years to come. In order to make the most of this development, a joint consideration of both sectors with intersecting and complementing aspects – more guest houses require more food products, tourists could be interested in buying locally manufactured products, hotels might request local agricultural products and so on – is essential.

8 Summary

This research provides a detailed examination of the socio-economic living conditions of the population in two rather remote mountainous regions (i.e. Kazbegi and Borjomi) in the Caucasus in Georgia. Household data was collected with a questionnaire specifically designed to gain information on the demographic composition of households, sources and composition of income, activities in agriculture and the tourism sector. Moreover, intended behavior regarding private households' intentions to enhance their (or start) activities in the tourism sector is analyzed with a structural equation model.

A descriptive analysis of the household data shows that animal husbandry and the cultivation of potatoes are more common in the Kazbegi region than in the Borjomi region. A closer look shows that in each region, there is a discernible difference between the respective main village (i.e. Stepantsminda for Kazbegi and Bakuriani for Borjomi) and other smaller villages included in the research. In both cases, agricultural activities are slightly higher in the smaller villages and self-employment in agriculture is an important source of income. Touristic activities, on the other hand, are more prominent in the main villages and an important source of income in Bakuriani. Stepantsminda is the only group that features wage employment outside of agriculture and tourism as an important income source. Diversification of income sources in the sense of being active in both agriculture and tourism is also stronger in the main villages Stepantsminda and Bakuriani than in the smaller villages of the Kazbegi and Borjomi region. In summary, Stepantsminda is a little stronger in tourism than in agriculture, while the Kazbegi villages are strongest in agriculture but lowest in income. Bakuriani is strongest in tourism and highest in income, while the Borjomi villages are weak in both sectors with low income. Comparing the smaller villages to the main villages, it shows that their income is particularly low, but in comparison to other parts of Georgia the income of the main villages is also low.

The analysis of the household data on the socio-economic living conditions shows that income and living conditions are generally rather poor. Analyzing intended behavior regarding an enhancement of touristic activities or starting such activities gives information on how to alleviate difficulties for such endeavors. The Theory of Planned Behavior (TPB, Fishbein & Ajzen 2010) serves as the theoretical framework for the analysis. According to the theory, three latent constructs influence intention to carry out a certain behavior – in this case the intention to start or enhance activities in the tourism sector. The basic model provides evidence for significant influences from subjective norm (i.e. the respondent's perceived approval of the behavior from others) and perceived behavioral control (i.e. the respondent's felt ability to carry out the behavior) on the intention to enhance tourism supply within the next year. This is in accordance with the TPB. However, the model could not prove that the respondent's attitude towards the behavior (the theory's third construct) significantly influences intention.

A special feature of this research is the inclusion of belief-based measures. The model was extended by normative and control beliefs for the significant factors subjective norm and perceived behavioral control respectively. Although such belief-based measures are recommended since they allow the formulation of targeted recommendations, they are not often incorporated in empirical studies of

the TPB. The analysis of beliefs reveals that in the case of subjective norm, family, friends and neighborhood are the most important referent groups while the respondents do not look for the government's approval of their actions. In the case of perceived behavioral control, likelihood of bank loans and feeling ill or tired significantly influence the construct and there is also a direct influence from what the family thinks a household should do to its perceived availability of doing so. These findings lead to the conclusion that when wanting to improve conditions for private households to start or enhance working in the tourism sector, affordable credits should be granted and mechanisms for times of illness need to be installed. While doing this, it is important to always keep in mind how important the social surrounding is and to design programs which do not only target the individual, but also the close social surrounding of the person in order to create acceptance for the development of tourism supply. The fact that this model finds no significant influence from attitude on intention and subjective norm has the strongest standardized influence is not in line with many other studies that have used the TPB. However, taking a closer look at the sample, it shows that the cultural background differs from that of the majority of studies with the TPB. Most commonly, TPB studies concentrate on Western societies, oftentimes the respondents are students. The present case analyzes data from rural Georgian households in a post-soviet society. This study provides evidence for the fact that the TPB can also be applied in collectivist cultures but with a shift in the importance of the latent explanatory constructs. Other studies in collectivist cultures have come to similar results.

After the model had been tested in its original form, a modification was tested to see if perceived behavioral control moderates the influence of attitude and subjective norm on intention (Yzer 2007). A moderation effect cannot be confirmed for this application, but it is possible that the sample size was too small to detect a significant effect. The statistical power of testing this moderation is low, so only a rather high moderated effect would become significant.

The integration of experience in the tourism sector as a background variable shows that there is a mediated influence from experience on intention. The constructs subjective norm and perceived behavioral control and the belief "family" mediate the influence of experience on intention. In other words, the more experience a household has in the tourism sector, the more favorable is the subjective norm, the higher is the perceived behavioral control and the more positive is the perceived support from the family towards enhancing such activities and in consequence the higher is the intention of doing so. As proposed by the Theory of Planned Behavior, there is no significant direct effect from experience on intention.

Altogether the different analyses show that the households in both research areas use agricultural activities mainly for subsistence purposes with only some exceptions of households that sell part of their production. The tourism sector offers another opportunity for income. In order to facilitate households' intentions to become active or enhance activities in this sector, programs should foster affordable credits along with a support system in cases of illness while taking into account the close social surrounding of individuals and households. At the same time it has to be kept in mind that tourism is not an option for everyone: especially in the smaller and more secluded villages the number of tourists is slim to none. On the other hand, a better offer for tourists could lead to more tourists which can also create more opportunities for work in other sectors.

9 References

Ajzen, Icek (n.d.a): Behavioral Interventions Based on the Theory of Planned Behavior. Available online at http://people.umass.edu/aizen/pdf/tpb.intervention.pdf, updated on March 12th, 2016.

Ajzen, Icek (n.d.b): Sample TPB Questionnaire. Available online at http://people.umass.edu/aizen/pdf/tpb.questionnaire.pdf, checked on September 4th, 2015.

Ajzen, Icek (1971): Attitudinal vs. Normative Messages. An Investigation of the Differential Effects of Persuasive Communications on Behavior. In *Sociometry* 34 (2), p. 263. DOI: 10.2307/2786416.

Ajzen, Icek (1985): From Intentions to Actions: A Theory of Planned Behavior. In Julius Kuhl (Ed.): Action control. From cognition to behavior. Berlin: Springer (Springer series in social psychology), pp. 11–39.

Ajzen, Icek (1991): The Theory of Planned Behavior. In *Organizational Behavior and Human Decision Processes* 50 (2), pp. 179–211. DOI: 10.1016/0749-5978(91)90020-T.

Ajzen, Icek (2002): Perceived Behavioral Control, Self-Efficacy, Locus of Control, and the Theory of Planned Behavior. In *J Appl Social Pyschol* 32 (4), pp. 665–683. DOI: 10.1111/j.1559-1816.2002.tb00236.x.

Ajzen, Icek (2005): Attitudes, personality and behavior. 2. ed. Maidenhead: Open Univ. Press (Mapping social psychology). Available online at http://reference-tree.com/book/attitudes-personality-and-behaviour?utm_source=gbv&utm_medium=referral&utm_campaign=collaboration.

Ajzen, Icek (2006): Constructing a TpB Questionnaire: Conceptual and Methodological Considerations. Available online at http://www.people.umass.edu/aizen/pdf/tpb.measurement.pdf, checked on July 9th, 2010.

Ajzen, Icek & Fishbein, Martin (1977): Attitude-behavior relations. A theoretical analysis and review of empirical research. In *Psychological Bulletin* 84 (5), pp. 888–918. DOI: 10.1037//0033-2909.84.5.888.

Ajzen, Icek & Fishbein, Martin (Eds.) (1980): Understanding attitudes and predicting social behavior. Pbk. ed. Englewood Cliffs, N.J: Prentice-Hall.

Ajzen, Icek & Madden, Thomas J. (1986): Prediction of goal-directed behavior. Attitudes, intentions, and perceived behavioral control. In *Journal of Experimental Social Psychology* 22 (5), pp. 453–474. DOI: 10.1016/0022-1031(86)90045-4.

Ajzen, Icek; Timko, Christine & White, John B. (1982): Self-monitoring and the attitude-behavior relation. In *Journal of Personality and Social Psychology* 42 (3), pp. 426–435. DOI: 10.1037/0022-3514.42.3.426.

Akhalkatsi, Maia; Ekhvaia, Jana & Asanidze, Zezva (2012): Diversity and Genetic Erosion of Ancient Crops and Wild Relatives of Agricultural Cultivars for Food. Implications for Nature Conservation in Georgia (Caucasus). In John P. Tiefenbacher (Ed.): Perspectives on nature conservation. Patterns, pressures and prospects. Rijeka, Croatia: InTech, pp. 51–92.

Al Ziadat, Mamdouh T. (2015): Applications of Planned Behavior Theory (TPB) in Jordanian Tourism. In *IJMS* 7 (3), pp. 95–106. DOI: 10.5539/ijms.v7n3p95.

Arbuckle, James L. (2011): IBM® SPSS® AMOS (TM) 20 User's Guide. Amos Development Corporation.

Armitage, Christopher J. & Conner, Mark (2001): Efficacy of the Theory of Planned Behaviour. A meta-analytic review. In *British Journal of Social Psychology* 40 (4), pp. 471–499. DOI: 10.1348/014466601164939.

Badurashvili, Irina & Nadareishvili, Mamuka (2012): Social Impact of Emigration and Rural-Urban Migration in Central and Eastern Europe. Final Country Report - Georgia. Available online at https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCIQFjAAahUKEwi344bOg9vHAhUFthQKHeWKDgo&url=http%3A%2F%2Fec.europa.eu%2Fsocial%2FBlobServlet%3FdocId%3D8862%26langId%3Den&usg=AFQjCNEx8XpFhRe8_4i2yh2_XXVA_RVqqw&cad=rja, checked on September 3rd, 2015.

Bakuriani Resorts (2014): About Bakuriani. Available online at http://www.bakurianiresorts.ge/menu-125, checked on January 14th, 2016.

Bakuriani-Ru (n.d.): Bakuriani. Available online at http://www.bakuriani.ru/english.htm, checked on January 14th, 2016.

Bamberg, Sebastian; Ajzen, Icek & Schmidt, Peter (2003): Choice of Travel Mode in the Theory of Planned Behavior. The Roles of Past Behavior, Habit, and Reasoned Action. In *Basic & Appl. Social Psych.* 25 (3), pp. 175–187. DOI: 10.1207/S15324834BASP2503_01.

Bandura, Albert (1977): Social learning theory. Englewood Cliffs NJ: Prentice-Hall (Prentice-Hall series in social learning theory).

Bansal, Harvir S. & Taylor, Shirley F. (2002): Investigating Interactive Effects in the Theory of Planned Behavior in a Service-Provider Switching Context. In *Psychol. Mark.* 19 (5), pp. 407–425. DOI: 10.1002/mar.10017.

Baron, Reuben M. & Kenny, David A. (1986): The moderator–mediator variable distinction in social psychological research. Conceptual, strategic, and statistical considerations. In *Journal of Personality and Social Psychology* 51 (6), pp. 1173–1182. DOI: 10.1037/0022-3514.51.6.1173.

Bassett-Gunter, Rebecca L.; Levy-Milne, Ryna; Naylor, Patti Jean; Symons Downs, Danielle; Benoit, Cecilia; Warburton, Darren E. R. et al. (2015): A comparison of Theory of Planned Behavior beliefs and healthy eating between couples without children and first-time parents. In *Journal of nutrition education and behavior* 47 (3), pp. 216–224. DOI: 10.1016/j.jneb.2015.01.003.

BBC News (2010): Russia-Georgia Border Crossing Reopens. March 1st, 2010. Available online at http://news.bbc.co.uk/2/hi/europe/8542746.stm, checked on August 17th, 2016.

Beck, Lisa & Ajzen, Icek (1991): Predicting dishonest actions using the theory of planned behavior. In *Journal of Research in Personality* 25 (3), pp. 285–301. DOI: 10.1016/0092-6566(91)90021-H.

Bentler, Peter M. & Bonett, Douglas G. (1980): Significance tests and goodness of fit in the analysis of covariance structures. In *Psychological Bulletin* 88 (3), pp. 588–606. DOI: 10.1037//0033-2909.88.3.588.

Bertelsmann Stiftung (2012): Bertelsmann Transformation Index (BTI) 2012. Georgia Country Report. Gütersloh. Available online at http://www.bti-project.org/uploads/tx_itao_download/BTI_2012_Georgia.pdf, checked on July 8th, 2015.

Bertelsmann Stiftung (2014): Bertelsmann Transformation Index (BTI) 2014. Georgia Country Report. Gütersloh. Available online at http://www.bti-project.org/fileadmin/files/BTI/Downloads/Reports/2014/pdf/BTI_2014_Georgia.pdf, checked on March 30th, 2016.

Bird, Barbara (1988): Implementing Entrepreneurial Ideas. The Case for Intention. In *The Academy of Management Review* 13 (3), pp. 442–453. DOI: 10.2307/258091.

Bollen, Kenneth A. & Davis, Walter R. (2009): Causal Indicator Models. Identification, Estimation, and Testing. In *Structural Equation Modeling: A Multidisciplinary Journal* 16 (3), pp. 498–522. DOI: 10.1080/10705510903008253.

Borjomi Municipal Working Group (2008): Social-Economic Development Plan of Borjomi Municipality. Borjomi Municipality, Samtskhe-Javakheti region, Georgia. Available online at http://www.google.de/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CDQQFjAA&url=http%3A%2F%2Fwww.fim.lublin.pl%2Fsakartwelo%2Fprezentacje%2Fborjomi_ekon_gegma_ing.doc&ei=NSRpUvKNKJKk4AT934CoDA&usg=AFQjCNF8NXjFnpxNMLHrmMQCW_VAEnbLUA&bvm=bv.55123115,d.bGE, checked on July 23rd, 2015.

Brosius, Felix (2008): SPSS 16. Das mitp-Standardwerk ; [fundierte Einführung in SPSS und die Statistik ; alle statistischen Verfahren mit praxisnahen Beispielen ; auf der CD: zahlreiche Datensätze für die Übungsbeispiele aus dem Buch]. 1. Aufl. Heidelberg: mitp.

Brown, Timothy A. (2006): Confirmatory factor analysis for applied research. New York: Guilford Press (Methodology in the social sciences).

Brown, Timothy A. (2015): Confirmatory factor analysis for applied research. 2. ed. New York, NY: Guilford Press (Methodology in the social sciences).

Bundesforschungszentrum für Wald (BFW) (2014): BFW-Beteiligung an Klimaprojekt in Georgien. Edited by Mayer, Peter and Lackner, Christian. Available online at http://bfw.ac.at/rz/bfwcms.web?dok=9771, checked on July 17th, 2015.

Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (Ed.) (2013): Statistisches Jahrbuch über Ernährung, Landwirtschaft und Forsten der Bundesrepublik Deutschland. Red.-Schluß: 31. Oktober 2013. Bremerhaven: Wirtschaftsverl. NW.

Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ) (2010-2015): Georgia. Situation and Cooperation. Available online at http://www.bmz.de/en/what_we_do/countries_regions/Central-Eastern-and-South-Eastern-Europe/georgien/zusammenarbeit.html, checked on July 17th, 2015.

Byrne, Barbara M. (2010): Structural equation modeling with AMOS. Basic concepts, applications, and programming. Second edition. New York: Routledge (Multivariate applications series). Available online at http://site.ebrary.com/lib/alltitles/docDetail.action?docID=10764160.

Carmack, Chakema C. & Lewis-Moss, Rhonda K. (2009): Examining the Theory of Planned Behavior Applied to Condom Use. The Effect-Indicator vs. Causal-Indicator Models. In *J Primary Prevent* 30 (6), pp. 659–676. DOI: 10.1007/s10935-009-0199-3.

Castanier, Carole; Deroche, Thomas & Woodman, Tim (2013): Theory of planned behaviour and road violations. The moderating influence of perceived behavioural control. In *Transportation Research Part F: Traffic Psychology and Behaviour* 18, pp. 148–158. DOI: 10.1016/j.trf.2012.12.014.

Caucasus Research Resource Center (CRRC) (2007): Study of Economic Relations Between Georgia and Armenia. The Development of Regional Trade Related Growth in Samtskhe-Javakheti. United Nations Development Programme (UNDP). Tbilisi. Available online at http://www.crrc.ge/uploads/files/reports/Study_of_Economic_Relations_Between_Georgia_and_Armenia_Report.pdf, checked on September 3rd, 2015.

Caucasus Research Resource Center (CRRC) (2011): Social Capital in Georgia: Final Report and Recommendations. Available online at http://www.crrc.ge/uploads/files/research_projects/CRRC_Social_Capital_Final_Report.pdf, checked on April 11th, 2016.

Cernusca, Alexander & Nakhutsrishvili, George (1983): Untersuchung der ökologischen Auswirkungen intensiver Schafbeweidung im Zentral-Kaukasus. In *Verhandlungen der Gesellschaft für Ökologie* 1981 (X), pp. 183–192.

Chanturia, Lado (2009): The Development of Civil Law in Georgia. In Lorenz King, Giorgi Xubua (Eds.): Georgia in transition. Experiences and perspectives. Frankfurt am Main: Lang (Schriften zur internationalen Entwicklungs- und Umweltforschung, 26), pp. 1–17.

Chen, Fang Fang (2007): Sensitivity of Goodness of Fit Indexes to Lack of Measurement Invariance. In *Structural Equation Modeling: A Multidisciplinary Journal* 14 (3), pp. 464–504. DOI: 10.1080/10705510701301834.

Chin, Wynne W. (1998): The Partial Least Squares Approach for Structural Equation Modeling. In George A. Marcoulides (Ed.): Modern Methods for Business Research. London: Lawrence Erlbaum Associates, pp. 295–336.

Chkoidze, Nino (2009): Stateness and Democratisation in Georgia. In Lorenz King, Giorgi Xubua (Eds.): Georgia in transition. Experiences and perspectives. Frankfurt am Main: Lang (Schriften zur internationalen Entwicklungs- und Umweltforschung, 26), pp. 59–76.

Coleman, James S. (1990): Foundations of social theory. Cambridge, Mass.: Belknap Press of Harvard Univ. Press.

Conner, Mark & McMillan, Brian (1999): Interaction Effects in the Theory of Planned Behaviour. Studying Cannabis Use. In *British Journal of Social Psychology* 38 (2), pp. 195–222. DOI: 10.1348/014466699164121.

Cooperative for Assistance and Relief Everywhere International (CARE) (2010): Reducing Poverty and Social Injustice in Georgia's Rural Communities. Program Document for CARE International in the Caucasus. Available online at http://www.geowel.org/files/program_document_for_care_2010.pdf, checked on March 23rd, 2016.

Csaki, Csaba & Lerman, Zvi (1997): Land reform and farm restructuring in East Central Europe and CIS in the 1990s. Expectations and achievements after the first five years. In *European Review of Agricultural Economics* 24 (3-4), pp. 428–452. DOI: 10.1093/erae/24.3-4.428.

Darker, C. D.; French, D. P.; Eves, F. F. & Sniehotta, F. F. (2010): An intervention to promote walking amongst the general population based on an 'extended' theory of planned behaviour. A waiting list randomised controlled trial. In *Psychology & Health* 25 (1), pp. 71–88. DOI: 10.1080/08870440902893716.

Darlington, Richard B. (1968): Multiple Regression in Psychological Research and Practice. In *Psychological Bulletin* 69 (3), pp. 161–182. DOI: 10.1037/h0025471.

Davidov, Eldad; Cieciuch, Jan; Meuleman, Bart; Schmidt, Peter; Algesheimer, René & Hausherr, Mirjam (2015): The Comparability of Measurements of Attitudes toward Immigration in the European Social Survey. Exact versus Approximate Measurement Equivalence. In *Public Opinion Quarterly* 79 (S1), pp. 244–266. DOI: 10.1093/poq/nfv008.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (n.d.): Land Management in Georgia. Project Description. Available online at http://www.giz.de/Themen/en/8158.htm, checked on May 16th, 2015.

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) (2013): Samtskhe-Javakheti Regional Development Strategy 2014-2021. Tbilisi. Available online at http://static.mrdi.gov.ge/52f9bfb50cf298a857ab7d59.pdf, checked on July 3rd, 2015.

Devex (2016): Borjomi Water and Wastewater Project in Georgia. Available online at https://www.devex.com/projects/tenders/borjomi-water-and-wastewater-project-in-georgia--2/4152, checked on August 17th, 2016.

Di Gregorio, Antonio & Jansen, Louisa J. M. (1998): Land cover classification system. LCCS : classification concepts and user manual. Rome: Food and Agriculture Organization of the United Nations. Available online at http://www.worldagroforestry.org/economics_papers/anonymous/WKIEMP/Datasets/Louis%20Verchot%20handover/WKIEMP%20cd1/Supporting%20documents/LCCS%20manual.pdf, checked on July 23rd, 2015.

Diamantopoulos, Adamantios (2006): The error term in formative measurement models. Interpretation and modeling implications. In *Jnl of Modelling in Management* 1 (1), pp. 7–17. DOI: 10.1108/17465660610667775.

Diamantopoulos, Adamantios & Winklhofer, Heidi M. (2001): Index Construction with Formative Indicators. An Alternative to Scale Development. In *Journal of Marketing Research* 38 (2), pp. 269–277. DOI: 10.1509/jmkr.38.2.269.18845.

Didebulidze, Alexander & Plachter, Harald (2002): Nature Conservation Aspects of Pastoral Farming in Georgia. In Bernd Redecker, Peter Finck, Werner Härdtle, Uwe Riecken, Eckhard Schröder (Eds.): Pasture landscapes and nature conservation. [the German Federal Agency for Nature and Conservation in cooperation with the University of Lüneburg organized an International Workshop

on "Pasture Landscapes and Nature Conservation" from 26 to 31 March 2001 in Lüneburg, Germany]. Berlin: Springer, pp. 87–105.

Didebulidze, Alexander & Urushadze, Tengiz (2009): Agriculture and Land Use Change in Georgia. In Lorenz King, Giorgi Xubua (Eds.): Georgia in transition. Experiences and perspectives. Frankfurt am Main: Lang (Schriften zur internationalen Entwicklungs- und Umweltforschung, 26), pp. 241–263.

Diekmann, Andreas (1997): Empirische Sozialforschung. Grundlagen, Methoden, Anwendungen. 3. Aufl. Reinbek bei Hamburg: Rowohlt-Taschenbuch-Verl. (Rororo Rowohlts Enzyklopädie, 55551).

Dillard, James Price (2011): An Application of the Integrative Model to Women's Intention to Be Vaccinated Against HPV: Implications for Message Design. In *Health Communication* 26 (5), pp. 479–486. DOI: 10.1080/10410236.2011.554170.

Dunn, Thomas J.; Baguley, Thom & Brunsden, Vivienne (2014): From alpha to omega: a practical solution to the pervasive problem of internal consistency estimation. In *British journal of psychology (London, England : 1953)* 105 (3), pp. 399–412. DOI: 10.1111/bjop.12046.

East, Robert (1993): Investment decisions and the theory of planned behaviour. In *Journal of Economic Psychology* 14 (2), pp. 337–375. DOI: 10.1016/0167-4870(93)90006-7.

Ebanoidze, Jaba (2003): Current Land Policy Issues in Georgia. In Food and Agriculture Organization of the United Nations (FAO) (Ed.): Land Reform, Land Settlement and Cooperatives. Special Edition 2003/3, pp. 125–140. Available online at ftp://ftp.fao.org/docrep/fao/006/y5026e/y5026e02.pdf, checked on December 16th, 2015.

Ecovision – Union for Sustainable Development (2011): Socio-Economic and Livelihood Assessment Report for Consultancy Services for Rapid Rural Assessment and Local Livelihood Opportunities. For UNDP Project: Restoration of Forest Ecosystems Damaged in Armed Conflict in Georgia. Edited by Ecovision – Union for Sustainable Development. Tbilisi.

Egiashvili, David (2011): Land Governance Assessment Framework. Georgia - Background Report.

Epton, Tracy; Norman, Paul; Dadzie, Aba-Sah; Harris, Peter R.; Webb, Thomas L.; Sheeran, Paschal et al. (2014): A theory-based online health behaviour intervention for new university students (U@Uni). Results from a randomised controlled trial. In *BMC Public Health* 14 (1), p. 563. DOI: 10.1186/1471-2458-14-563.

Erkomaishvili, Gulnaz; Gvelesiani, Revaz; Kharaishvili, Eteri & Chavleishvili, Marina (2014): Policy of Tourism and Opportunities of Development of Wellness Industry in Georgia. World Academy of Science, Engineering and Technology. In *International Journal of Social, Management, Economics and Business Engineering* 8 (1), pp. 176–180. Available online at http://waset.org/publications/9997255/policy-of-tourism-and-opportunities-of-development-of-wellness-industry-in-georgia.

Erten, Sinan; Bamberg, Sebastian; Graf, Dittmar & Klee, Rainer (2000): Determinants for Practicing Educational Methods in Environmental Education. A Comparison Between Turkish and German Teachers Using The Theory of Planned Behavior. In : Proceedings. III Conference of European Researchers in Didactic of Biology. Santiago de Compostela (Spain), September 27th - October 1st, pp. 375–389. Available online at

http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.510.9592&rep=rep1&type=pdf, checked on February 4th, 2016.

European Social Survey (ESS) (2004): Source Questionnaire (Round 2, 2004/5). Final Version. Edited by European Social Survey (ESS). Available online at ess.nsd.uib.no/streamer/?module=main&year=2005&country=&download=%5CFieldwork+documents%5C2005%5C01%23ESS2+-+Main+questionnaire+%28including+interviewer%27s+form%29%5C.%5CESS2Source_Mainquestionnaire.pdf, checked on August 15th, 2016.

Federal Office for Migration and Refugees and International Organization for Migration (Ed.) (2012): Country Fact Sheet. Georgia. Available online at http://www.60-jahre-bamf.de/SharedDocs/MILo-DB/EN/Rueckkehrfoerderung/Laenderinformationen/Informationsblaetter/cfs-georgien-download-englisch.pdf;jsessionid=76AD9EAC525C360508D9FD5BE7F57341.1_cid368?__blob=publicationFile, checked on July 19th, 2013.

Fishbein, Martin (1966): Sexual behavior and propositional control. Paper presented at the annual meeting of the Psychonomic Society. Cited by: Fishbein, Martin; Ajzen, Icek (1975): Belief, attitude, intention and behavior. An introduction to theory and research. Reading, Mass.: Addison-Wesley (Addison-Wesley series in social psychology)., 1966.

Fishbein, Martin & Ajzen, Icek (1975): Belief, attitude, intention and behavior. An introduction to theory and research. Reading, Mass.: Addison-Wesley (Addison-Wesley series in social psychology).

Fishbein, Martin & Ajzen, Icek (2010): Predicting and changing behavior. The reasoned action approach. New York: Psychology Press. Available online at http://site.ebrary.com/lib/alltitles/docDetail.action?docID=10462474.

Fishbein, Martin; Ajzen, Icek & Hinkle, Ron (1980): Predicting and Understanding Voting in American Elections: Effects of External Variables. In Icek Ajzen, Martin Fishbein (Eds.): Understanding attitudes and predicting social behavior. Pbk. ed. Englewood Cliffs, N.J: Prentice-Hall, pp. 173–195.

Fishbein, Martin; Jaccard, James J.; Davidson, Andrew R.; Ajzen, Icek & Loken, Barbara (1980): Predicting and Understanding Family Planning Behaviors: Beliefs, Attitudes, and Intentions. In Icek Ajzen, Martin Fishbein (Eds.): Understanding attitudes and predicting social behavior. Pbk. ed. Englewood Cliffs, N.J: Prentice-Hall, pp. 130–147.

Forest Law Enforcement & Governance (FLEG) (Ed.) (2010): The Economic and Social Impacts of Unsustainable Forest Management Practices and Illegal Logging on Rural Population of Georgia. Tbilisi. Available online at http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&ved=0CDgQFjAE&url=http%3A%2F%2Fwww.enpi-info.eu%2Flibrary%2Fsites%2Fdefault%2Ffiles%2Fattachments%2F4.02.04.Final_Report_Executive_Summary_Georgia_ENG.pdf&ei=7GuWVYnjFYHMsgHBoLfABg&usg=AFQjCNFQCdY98mZ1DwZ66QCR_KGfDVwVvg&bvm=bv.96952980,d.bGg, checked on March 12th, 2016.

Fornell, Claes & Larcker, David F. (1981): Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. In *Journal of Marketing Research* 18 (1), pp. 39–50.

Francis, Jillian J.; Eccles, Martin P.; Johnston, Marie; Walker, Anne E., Grimshaw, Jeremy; Foy, Robbie; Kaner, Eileen et al. (2004): Constructing questionnaires based on the theory of planned behaviour. A manual for health services researchers. Newcastle upon Tyne: Centre for Health Services Research, University of Newcastle.

Francis, Jillian J.; Johnston, Marie; Eccles, Martin P.; Grimshaw, Jeremy & Kaner, Eileen (2004): Measurement Issues in the Theory of Planned Behavior: A supplement to the Manual for constructing questionnaires based on the Theory of Planned Behaviour. Centre for Health Services Research. University of Newcastle. Available online at https://www.google.de/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0ahUKEwiO9d2tnrvLAhUHiCwKHerfBHEQFggnMAE&url=https%3A%2F%2Fwww.researchgate.net%2Ffile.PostFileLoader.html%3Fid%3D55c9d3f260614b86a78b4567%26assetKey%3DAS%253A273829526474753%2540144229745539 4&usg=AFQjCNFoSRSRh2ytLtnaYUzL0bNRH7PmIQ&cad=rja, checked on March 12th, 2016.

Frey, Dieter; Stahlberg, Dagmar & Gollwitzer, Peter (1993): Einstellung und Verhalten: Die Theorie des überlegten Handelns und die Theorie des geplanten Verhaltens. In Dieter Frey, Martin Irle (Eds.): Theorien der Sozialpsychologie. I. Bern: Huber, pp. 361–398.

Gabidsaschwili, B. & Gelaschwili, Simon (2007): Armut in Georgien. Edited by Arbeitspapiere des Deutsch-Georgischen Arbeitskreises für Finanz- und Sozialpolitik (Finanzwissenschaftliche Diskussionsbeiträge der Universität Potsdam, No. G-7).

Gavardashvili, Givi; Schaefer, Michael & King, Lorenz (2007): Debris flows at the river Mletis Khevi (Greater Caucasus Mountains, Georgia) and its assessment methods. Giessen (Discussion papers / Zentrum für Internationale Entwicklungs- und Umweltforschung, Justus-Liebig-Universität Gießen). Available online at http://geb.uni-giessen.de/geb/volltexte/2008/5388/index.html.

Gelfand, Michele J.; Bhawuk, Dharm P. S.; Nishii, Lisa Hisae & Bechtold, David J. (2004): Individualism and Collectivism. In Robert J. House, Paul J. Hanges, Mansour Javidan, Peter W. Dorfman, Vipin Gupta (Eds.): Culture, leadership, and organizations. The GLOBE study of 62 societies. Thousand Oaks, Calif.: Sage Publ, pp. 437–512.

Georgian-Voyge (2014-2015): Borjomi. Available online at http://georgian-a.com/en/bordzhomi.html, checked on January 14th, 2016.

Germany Trade and Invest (2014): Wirtschaftsentwicklung 2013/2014. Georgien. Edited by Germany Trade and Invest Gesellschaft für Außenwirtschaft und Standortmarketing mbH. Available online at https://www.gtai.de/GTAI/Content/DE/Trade/Fachdaten/PUB/2014/09/pub201409088000_19329_wirtschaftsentwicklung---georgien-2013-2014.pdf, checked on September 2nd, 2015.

Gogodze, Joseph; Kan, Iddo & Kimhi, Ayal (2007): Land Reform and Rural Well Being in the Republic of Georgia: 1996-2003. Hebrew University of Jerusalem (Discussion Paper, 1.07).

Gupta, Vipin & Hanges, Paul J. (2004): Regional and Climate Clustering of Societal Cultures. In Robert J. House, Paul J. Hanges, Mansour Javidan, Peter W. Dorfman, Vipin Gupta (Eds.): Culture, leadership, and organizations. The GLOBE study of 62 societies. Thousand Oaks, Calif.: Sage Publ, pp. 178–218.

Haerdle, Benjamin & Bontjer, Andrea (2010): Socio-Economic Structure of a Central Georgian Grazing System. In Harald Plachter, Ulrich Hampicke (Eds.): Large-scale Livestock Grazing. A Management Tool for Nature Conservation. Berlin, Heidelberg: Springer-Verlag Berlin Heidelberg, pp. 300–305.

Hankins, Matthew; French, David & Horne, Rob (2000): Statistical guidelines for studies of the theory of reasoned action and the theory of planned behaviour. In *Psychology & Health* 15 (2), pp. 151–161. DOI: 10.1080/08870440008400297.

Hansson, Helena; Ferguson, Richard & Olofsson, Christer (2012): Psychological Constructs Underlying Farmers' Decisions to Diversify or Specialise their Businesses - An Application of Theory of Planned Behaviour. In *Journal of Agricultural Economics* 63 (2), pp. 465–482. DOI: 10.1111/j.1477-9552.2012.00344.x.

Harkness, Janet A. & Schoua-Glusberg, Alicia (1998): Questionnaires in Translation. In *ZUMA Nachrichten-Spezial*, pp. 87–126. Available online at http://isites.harvard.edu/fs/docs/icb.topic506406.files/znspez3_04_Harkness_Glusberg.pdf, checked on June 24th, 2016.

Hauser, Robert M. & Goldberger, Arthur S. (1971): The Treatment of Unobservable Variables in Path Analysis. In *Sociological Methodology* 3, pp. 81–117. DOI: 10.2307/270819.

Hofstede, Geert (1998): A Case for Comparing Apples with Oranges. Intemational Differences in Values. In *International Journal of Comparative Sociology* 39 (1), pp. 16–31. DOI: 10.1177/002071529803900103.

House, Robert J. & Javidan, Mansour (2004): Overview of GLOBE. In Robert J. House, Paul J. Hanges, Mansour Javidan, Peter W. Dorfman, Vipin Gupta (Eds.): Culture, leadership, and organizations. The GLOBE study of 62 societies. Thousand Oaks, Calif.: Sage Publ, pp. 9–28.

Hox, Joop J. & Bechger, Timo M. (1998): An Introduction in Structural Equation Modeling. In *Family Science Review* (11), pp. 354–373.

Hrubes, Daniel; Ajzen, Icek & Daigle, John (2001): Predicting Hunting Intentions and Behavior. An Application of the Theory of Planned Behavior. In *Leisure Sciences* 23 (3), pp. 165–178. DOI: 10.1080/014904001316896855.

Hsu, C. H. C. & Huang, S. (2012): An Extension of the Theory of Planned Behavior Model for Tourists. In *Journal of Hospitality & Tourism Research* 36 (3), pp. 390–417. DOI: 10.1177/1096348010390817.

Iacobucci, Dawn; Saldanha, Neela & Deng, Xiaoyan (2007): A Meditation on Mediation. Evidence That Structural Equations Models Perform Better Than Regressions. In *Journal of Consumer Psychology* 17 (2), pp. 139–153. DOI: 10.1016/S1057-7408(07)70020-7.

International Fund for Agricultural Development (IFAD) (2004): Georgia. Country Strategic Opportunities Paper. Rome. Available online at http://www.ifad.org/gbdocs/eb/83/e/eb-2004-83-r-12.pdf, checked on March 18th, 2016.

International Labour Organization (ILO) (Ed.) (1993): Resolution Concerning the International Classification of Status in Employment (ICSE), Adopted by the 15th International Conference of Labour Statisticians. Available online at

http://www.ilo.org/public/english/bureau/stat/download/res/icse.pdf, checked on March 18th, 2016.

International Union for Conservation of Nature (IUCN) (2008): Assessment of Ecotourism Potential in Georgia. Norwegian Ministry of Foreign Affairs. Available online at http://greengeorgia.ge/sites/default/files/Ecotourism%20Assessment%20in%20Georgia.pdf, checked on March 18th, 2016.

Jamestown Foundation (Ed.) (2013): Russia and Georgia Expand Their Only Border Crossing Point. September 16th, 2013 (Eurasia Daily Monitor, 10 (163)). Available online at http://www.refworld.org/docid/52396c1c4.html, checked on March 18th, 2016.

Janowski, Monica (2003): Rural Non-Farm Livelihood Activities in Romania, Georgia and Armenia: Synthesis of Findings from Fieldwork carried out at Village Level 2001–2002. Natural Resources Institute (NRI Report, 2724). Available online at http://projects.nri.org/rnfe/pub/papers/2724.pdf, checked on March 18th, 2016.

Jarvis, Cheryl Burke; MacKenzie, Scott B. & Podsakoff, Philip M. (2003): A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research. In *J CONSUM RES* 30 (2), pp. 199–218. DOI: 10.1086/376806.

Jöreskog, Karl G. (1993): Testing Structural Equation Models. In Kenneth A. Bollen, J. Scott Long (Eds.): Testing Structural Equation Models. Newbury Park: Sage (Sage focus editions, 154), pp. 294–316.

Kan, Iddo; Kimhi, Ayal & Lerman, Zvi (2006): Farm Output, Non-Farm Income, and Commercialization in Rural Georgia. Hebrew University of Jerusalem, Center for Agricultural Economic Research and Department of Agricultural Economics and Management (Discussion Paper, 16.06). Available online at http://departments.agri.huji.ac.il/economics/en/publications/discussion_papers/2006/kan-kimhi.pdf, checked on March 18th, 2016.

Kegel, Hannah (2003): The Significance of Subsistence Farming in Georgia as an Economic and Social Buffer. In Steffen Abele, Klaus Frohberg (Eds.): Subsistence agriculture in Central and Eastern Europe: how to break the vicious circle? Halle (Saale): IAMO (Studies on the agricultural and food sector in Central and Eastern Europe, 22), pp. 147–160.

Khardzeishvili, S. (2009): Ecotourism in Georgia. In *Journal of Environmental Protection and Ecology* 10 (2), pp. 513–523. Available online at https://docs.google.com/a/jepe-journal.info/viewer?a=v&pid=sites&srcid=amVwZS1qb3VybmFsLmluZm98amVwZS1qb3VybmFsfGd4Ojc3ZGJjNWEzZTRjMzVhMTM, checked on March 18th, 2016.

King, Lorenz & Xubua, Giorgi (Eds.) (2009): Georgia in transition. Experiences and perspectives. Frankfurt am Main: Lang (Schriften zur internationalen Entwicklungs- und Umweltforschung, 26).

Kline, Rex B. (1998): Principles and practice of structural equation modeling. New York, NY: Guilford Press (Methodology in the social sciences). Available online at http://www.loc.gov/catdir/bios/guilford051/97046642.html.

Kline, Rex B. (2011): Principles and Practice of Structural Equation Modeling. 3. ed. New York: Guilford Press (Methodology in the social sciences). Available online at http://site.ebrary.com/lib/academiccompletetitles/home.action.

Knowlden, Adam P.; Sharma, Manoj & Bernard, Amy L. (2012): A Theory of Planned Behavior research model for predicting the sleep intentions and behaviors of undergraduate college students. In *The journal of primary prevention* 33 (1), pp. 19–31. DOI: 10.1007/s10935-012-0263-2.

Körner, Christian (1980): Ökologische Untersuchungen an Schafweiden im Zentralkaukasus. In *Der Alm- und Bergbauer* (30 (5)), pp. 151–161.

Kothe, Emily J. & Mullan, Barbara A. (2015): Interaction Effects in the Theory of Planned Behaviour: Predicting Fruit and Vegetable Consumption in Three Prospective Cohorts. In *British journal of health psychology* 20 (3), pp. 549–562. DOI: 10.1111/bjhp.12115.

Kötschau, Kerstin (2012): Impact of Land Reform Strategies on Rural Poverty in the Commonwealth of Independent States. Comparison Between Georgia and Moldova. Frankfurt: Peter Lang GmbH Internationaler Verlag der Wissenschaften (Schriften zur internationalen Entwicklungs- und Umweltforschung, Bd. 28). Available online at http://gbv.eblib.com/patron/FullRecord.aspx?p=1129036.

Kötschau, Kerstin; Sepashvili, Eka & Narimanidze, Nino (2009): Agriculture in Georgia – Commercial Sector or Social Safety Net? In Lorenz King, Giorgi Xubua (Eds.): Georgia in transition. Experiences and perspectives. Frankfurt am Main: Lang (Schriften zur internationalen Entwicklungs- und Umweltforschung, 26), pp. 221–240.

Kraha, Amanda; Turner, Heather; Nimon, Kim; Zientek, Linda Reichwein & Henson, Robin K. (2012): Tools to support interpreting multiple regression in the face of multicollinearity. In *Frontiers in psychology* 3, pp. 1–16. DOI: 10.3389/fpsyg.2012.00044.

Kristiansen, Stein & Indarti, Nurul (2004): Entrepreneurial Intention Among Indonesian and Norwegian Students. In *J. Enterprising Culture* 12 (01), pp. 55–78. DOI: 10.1142/S021849580400004X.

Krueger, Norris F.; Reilly, Michael D. & Carsrud, Alan L. (2000): Competing models of entrepreneurial intentions. In *Journal of Business Venturing* 15 (5-6), pp. 411–432. DOI: 10.1016/S0883-9026(98)00033-0.

Kühnel, Steffen-M. & Krebs, Dagmar (2006): Statistik für die Sozialwissenschaften. Grundlagen, Methoden, Anwendungen. Orig.-Ausg., 3., Aufl. Reinbek bei Hamburg: Rowohlt-Taschenbuch-Verl. (Rororo Rowohlts Enzyklopädie, 55639).

LaPiere, Richard T. (1934): Attitudes vs. Actions. In *Social Forces* 13 (2), pp. 230–237. DOI: 10.2307/2570339.

Lee, Sik-Yum & Song, Xin-Yuan (2004): Evaluation of the Bayesian and Maximum Likelihood Approaches in Analyzing Structural Equation Models with Small Sample Sizes. In *Multivariate Behavioral Research* 39 (4), pp. 653–686. DOI: 10.1207/s15327906mbr3904_4.

Leeuw, A. de; Valois, Pierre; Morin, Alexandre J. S. & Schmidt, Peter (2014): Gender Differences in Psychosocial Determinants of University Students' Intentions to Buy Fair Trade Products. In *J Consum Policy* 37 (4), pp. 485–505. DOI: 10.1007/s10603-014-9262-4.

Leibenstein, Harvey (1950): Bandwagon, Snob, and Veblen Effects in the Theory of Consumers' Demand. In *The Quarterly Journal of Economics* 64 (2), pp. 183–207. DOI: 10.2307/1882692.

Lerman, Zvi (2006): The Impact of Land Reform on Rural Household Incomes in Transcaucasia. In *Eurasian Geography and Economics* 47 (1), pp. 112–123. DOI: 10.2747/1538-7216.47.1.112.

Liñán, Francisco & Chen, Yi-Wen (2009): Development and Cross-Cultural Application of a Specific Instrument to Measure Entrepreneurial Intentions. In *Entrepreneurship Theory and Practice* 33 (3), pp. 593–617. DOI: 10.1111/j.1540-6520.2009.00318.x.

Little, Todd D.; Card, Noel A.; Bovaird, James A.; Preacher, Kristopher J. & Crandall, Christian S. (2007): Structural Equation Modeling of Mediation and Moderation with Contextual Factors. In Todd D. Little, James A. Bovaird, Noel A. Card (Eds.): Modeling contextual effects in longitudinal studies. Mahwah, NJ: Erlbaum, pp. 207–230.

Lowe, Rob; Eves, Frank & Carroll, Douglas (2002): The Influence of Affective and Instrumental Beliefs on Exercise Intentions and Behavior. A Longitudinal Analysis. In *J Appl Social Pyschol* 32 (6), pp. 1241–1252. DOI: 10.1111/j.1559-1816.2002.tb01434.x.

Mackinnon, David P.; Lockwood, Chondra M. & Williams, Jason (2004): Confidence Limits for the Indirect Effect: Distribution of the Product and Resampling Methods. In *Multivariate Behavioral Research* 39 (1), pp. 99–128. DOI: 10.1207/s15327906mbr3901_4.

Mamniashvili, Giorgi (2016, in preparation): Sustainable Tourism Development in Mountainous Regions of Georgia – A Bakuriani and Kazbegi Case Study. Unpublished dissertation. Justus Liebig University, Giessen.

Mayhew, Matthew J.; Hubbard, Steven M.; Finelli, Cynthia J.; Harding, Trevor S. & Carpenter, Donald D. (2009): Using Structural Equation Modeling to Validate the Theory of Planned Behavior as a Model for Predicting Student Cheating. In *The Review of Higher Education* 32 (4), pp. 441–468. DOI: 10.1353/rhe.0.0080.

McMillan, Brian & Conner, Mark (2003): Applying an Extended Version of the Theory of Planned Behavior to Illicit Drug Use Among Students. In *J Appl Social Pyschol* 33 (8), pp. 1662–1683. DOI: 10.1111/j.1559-1816.2003.tb01968.x.

Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) (Ed.) (2010a): Annex of the Draft Final Report: Feasibility Study for the Ecoregional Programme III (Georgia), Kazbegi Project. Available online at http://tjs-caucasus.org/wp-content/uploads/2013/09/Feasibility-Study-BR-Kazbegi-ANNEX-2010-04-01.pdf, checked on January 14th, 2016.

Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) (Ed.) (2010b): Feasibility Study for the Ecoregional Programme III (Georgia), Kazbegi Project. Final Report. Available online at http://tjs-caucasus.org/wp-content/uploads/2013/09/Final-Rep-Feasibility-Study-Kazbegi-Project.pdf, checked on January 14th, 2016.

Ministry of Environment Protection and Natural Resources (MEPNR) and Agency for Protected Areas (APA) (Ed.) (2013): Legends of Nature. Protected Areas of the Southern Caucasus. Georgia. Available online at http://www.rec-caucasus.org/files/publications/pub_1406112288.pdf, checked on July 17th, 2015.

National Statistics Office of Georgia (GeoStat) (n.d.): Main Results of the First National Agricultural Census of Georgia 2004. Tbilisi. Available online at http://www.geostat.ge/index.php?action=page&p_id=662&lang=eng, checked on December 18th 2015.

National Statistics Office of Georgia (GeoStat) (2008): Agriculture of Georgia 2007. Tbilisi.

National Statistics Office of Georgia (GeoStat) (2013a): Agriculture of Georgia 2012. Statistical Publication. Tbilisi. Available online at http://geostat.ge/index.php?action=wnews&lang=eng&npid=237, checked on June 9th, 2015.

National Statistics Office of Georgia (GeoStat) (2013b): Statistical Yearbook of Georgia: 2013. Tbilisi. Available online at http://geostat.ge/cms/site_images/_files/yearbook/Yearbook_Geo_2013.pdf, checked on December 15th, 2015.

National Statistics Office of Georgia (GeoStat) (2013c): Data from Population Census 1989 and 2002 to Giorgi Mamniashvili. Tbilisi, February 2013.

National Statistics Office of Georgia (GeoStat) (2015a): Agriculture of Georgia 2014. Statistical Publication. Tbilisi. Available online at http://geostat.ge/cms/site_images/_files/english/agriculture/Agriculture%20of%20Georgia%202014.pdf, checked on December 18th, 2015.

National Statistics Office of Georgia (GeoStat) (2015b): Distribution of Average Monthly Incomes per Household by Urban and Rural Areas. Available online at http://geostat.ge/?action=page&p_id=182&lang=eng, checked on December 18th, 2015.

National Statistics Office of Georgia (GeoStat) (2015c): Distribution of Population Age of 15 and Older by Economic Status in Urban–Rural Areas, 1998-2014. Available online at http://geostat.ge/index.php?action=page&p_id=146&lang=eng, updated on December 18th, 2015.

National Statistics Office of Georgia (GeoStat) (2015d): National Statistics Office of Georgia. Official Website. Edited by National Statistics Office of Georgia (GeoStat). Tbilisi. Available online at http://geostat.ge/index.php?lang=eng, checked on July 22nd, 2015.

National Statistics Office of Georgia (GeoStat) (2015e): Standard of Living. Available online at http://geostat.ge/?action=page&p_id=1202&lang=eng, checked on December 18th, 2015.

National Statistics Office of Georgia (GeoStat) (2015f): Statistical Yearbook of Georgia: 2015. Tbilisi. Available online at http://www.geostat.ge/cms/site_images/_files/yearbook/Yearbook_2015.pdf, checked on January 21st, 2016.

Norman, Paul & Smith, Lawrence (1995): The theory of planned behaviour and exercise. An investigation into the role of prior behaviour, behavioural intentions and attitude variability. In *European Journal of Social Psychology* 25 (4), pp. 403–415. DOI: 10.1002/ejsp.2420250405.

Nunkoo, Robin; Gursoy, Dogan & Ramkissoon, Haywantee (2013): Developments in Hospitality Marketing and Management. Social Network Analysis and Research Themes. In *Journal of Hospitality Marketing & Management* 22 (3), pp. 269–288. DOI: 10.1080/19368623.2013.753814.

Nunkoo, Robin & Ramkissoon, Haywantee (2010): Gendered theory of planned behaviour and residents' support for tourism. In *Current Issues in Tourism* 13 (6), pp. 525–540. DOI: 10.1080/13683500903173967.

Nunkoo, Robin; Smith, Stephen L. J. & Ramkissoon, Haywantee (2013): Residents' attitudes to tourism. A longitudinal study of 140 articles from 1984 to 2010. In *Journal of Sustainable Tourism* 21 (1), pp. 5–25. DOI: 10.1080/09669582.2012.673621.

OANDA (2011): Currency Converter. Georgian Lari in Euro on July 1st, 2011. Available online at https://www.oanda.com/currency/converter/, checked on December 28th, 2016.

Organisation for Economic Co-operation and Development (OECD) (2001): Glossary of Statistical Terms. Household. Available online at http://stats.oecd.org/glossary/detail.asp?ID=1255, updated on July 29th, 2002, checked on March 18th, 2016.

Osgood, Charles Egerton (1952): The nature and measurement of meaning. In *Psychological Bulletin* 49 (3), pp. 197–237. DOI: 10.1037/h0055737.

Paxton, Pamela; Hipp, John R. & Marquart-Pyatt, Sandra (2011): Nonrecursive models. Endogeneity, reciprocal relationships, and feedback loops. Los Angeles, Calif: Sage (Quantitative applications in the social sciences, 168).

Peter, Sibylle Isabelle (2001): Kundenbindung als Marketingziel. Identifikation und Analyse zentraler Determinanten. Univ., Diss.--Mannheim, 1996. 2nd, revised and updated edition, reprint. Wiesbaden: Gabler (Neue betriebswirtschaftliche Forschung, 223).

Plachter, Harald & Hampicke, Ulrich (2010): Nature Conservation Accounting for Large-Scale Livestock Grazing. In Harald Plachter, Ulrich Hampicke (Eds.): Large-scale Livestock Grazing. A Management Tool for Nature Conservation. Berlin, Heidelberg: Springer-Verlag Berlin Heidelberg, pp. 439–461.

Porst, Rolf (2009): Fragebogen. Ein Arbeitsbuch. 2. Aufl. Wiesbaden: VS Verl. für Sozialwiss (Studienskripten zur Soziologie). Available online at http://dx.doi.org/10.1007/978-3-531-91840-2.

Povey, Rachel; Conner, Mark; Sparks, Paul; James, Rhiannon & Shepherd, Richard (2000): The Theory of Planned Behaviour and Healthy Eating: Examining Additive and Moderating Effects of Social Influence Variables. In *Psychology & Health* 14 (6), pp. 991–1006. DOI: 10.1080/08870440008407363.

Presser, Stanley & Blair, Johnny (1994): Survey Pretesting: Do Different Methods Produce Different Results? In *Sociological Methodology* (Vol. 24), pp. 73–104.

ProCredit Bank (2015): History and Shareholders. Available online at http://en.procreditbank.com.ua/about/history-and-shareholders/, updated on July 16th, 2015, checked on July 17th, 2015.

Prüfer, Peter & Rexroth, Margrit (1996): Verfahren zur Evaluation von Survey-Fragen: Ein Überblick. In *ZUMA Nachrichten* (39), pp. 95–116.

Radvanyi, Jean & Muduyev, Shakhmardan (2007): Challenges Facing the Mountain Peoples of the Caucasus. In *Eurasian Geography and Economics* 48 (2), pp. 157–177. DOI: 10.2747/1538-7216.48.2.157.

Rauner, Astrid (2013): Struktur und Vegetation einer Weidewaldlandschaft im Kleinen Kaukasus (Georgien). Master thesis. Justus Liebig University, Gießen.

Reinecke, Jost (1999): Interaktionseffekte in Strukturgleichungsmodellen mit der Theorie des geplanten Verhaltens: Multiple Gruppenvergleiche und Produktterme mit latenten Variablen. In *ZUMA Nachrichten* 23 (45), pp. 88–114. Available online at http://www.gesis.org/fileadmin/upload/forschung/publikationen/zeitschriften/zuma_nachrichten/zn_45.pdf, checked on August 6th, 2015.

Rowland, Richard (2006): National and Regional Population Trends in Georgia, 1989-2002. Results from the 2002 Census. In *Eurasian Geography and Economics* 47 (2), pp. 221–242. DOI: 10.2747/1538-7216.47.2.221.

Salukvadze, Joseph (2008): Good Governance and Natural Resources Tenure in Eastern Europe and CIS Region. Food and Agriculture Organization of the United Nations (FAO). Tbilisi (Land Tenure Working Paper, 3).

Schafer, Joseph L. & Graham, John W. (2002): Missing data. Our view of the state of the art. In *Psychological Methods* 7 (2), pp. 147–177. DOI: 10.1037//1082-989X.7.2.147.

Schmidt, Peter & Herrmann, Johannes (2011): Structural Equation Modeling. In Bertrand Badie, Dirk Berg-Schlosser, Leonardo Morlino (Eds.): International Encyclopedia of Political Science. Thousand Oaks, CA: SAGE Publications, Inc, pp. 2553–2558.

Schmidt, Peter; Tatarko, Alexander & Amerkhanova, Natalia (2013): Entrepreneurial Intention, Values, and the Reasoned Action Approach. Results from a Russian Population Survey. Working Paper. NRU Higher School of Economics (Series Psychology, 12). Available online at http://www.hse.ru/data/2013/07/04/1286138082/12PSY2013.pdf, checked on February 2nd, 2016.

Schroeder, Lilli A.; Chaplin, Stephen & Isselstein, Johannes (2015): What influences farmers' acceptance of agri-environment schemes? An ex-post application of the 'Theory of Planned Behaviour'. In *Applied Agricultural and Forestry Research* 65 (1), pp. 15–28.

Schulze, Eberhard; Tillack, Peter & Mosashvili, Nodar (2003): Zur wirtschaftlichen Situation georgischer Landwirtschaftsbetriebe. Edited by Institute of Agricultural Development in Central and Eastern Europe (IAMO) (Discussion Paper, 48). Available online at http://hdl.handle.net/10419/28574, checked on July 21st, 2015.

Schwartz, Shalom H. (1990): Individualism-Collectivism. Critique and Proposed Refinements. In *Journal of Cross-Cultural Psychology* 21 (2), pp. 139–157. DOI: 10.1177/0022022190212001.

Sheeran, Paschal; Trafimow, David; Finlay, Krystina A. & Norman, Paul (2002): Evidence that the type of person affects the strength of the perceived behavioural control-intention relationship. In *British Journal of Social Psychology* 41 (2), pp. 253–270. DOI: 10.1348/014466602760060129.

Sideridis, Georgios D.; Tsaousis, Ioannis & Al-harbi, Khaleel A. (2015): Multi-Population Invariance With Dichotomous Measures. Combining Multi-Group and MIMIC Methodologies in Evaluating the General Aptitude Test in the Arabic Language. In *Journal of Psychoeducational Assessment* 33 (6), pp. 568–584. DOI: 10.1177/0734282914567871.

Smetana, J. G. & Adler, N. E. (1980): Fishbein's Value x Expectancy Model. An Examination of Some Assumptions. In *Personality and Social Psychology Bulletin* 6 (1), pp. 89–96. DOI: 10.1177/014616728061013.

Sparks, Beverley & Pan, Grace Wen (2009): Chinese Outbound tourists. Understanding their attitudes, constraints and use of information sources. In *Tourism Management* 30 (4), pp. 483–494. DOI: 10.1016/j.tourman.2008.10.014.

Sperber, Brenda M.; Fishbein, Martin & Ajzen, Icek (1980): Predicting and Understanding Women's Occupational Orientations: Factors Underlying Choice Intentions. In Icek Ajzen, Martin Fishbein (Eds.): Understanding attitudes and predicting social behavior. Pbk. ed. Englewood Cliffs, N.J: Prentice-Hall, pp. 113–129.

Surmanidze, Lali & Tsuladze, Lia (2008): The Formation of Nation-State and Cultural Identity: A Georgian Perspective. In *International Black Sea University Scientific Journal* 2 (2), pp. 87–102.

Tephnadze, Nato; Abdaladze, Otar; Nakhutsrishvili, George; Simmering, Dietmar; Waldhardt, Rainer & Otte, Annette (2014): The impacts of management and site conditions on the phytodiversity of the upper montane and subalpine belts in the Central Greater Caucasus. In *Phytocoenologia* 44 (3), pp. 255–291. DOI: 10.1127/0340-269X/2014/0044-0579.

Theißen, Tim (2011): Dynamics and Spatial Pattern of Land Cover and Land Use in a Greater Caucasus Region. Master thesis. Justus Liebig University, Gießen. Institute of Landscape Ecology and Resources Management.

Tkeshelashvili, Nino (2009): The Effects of Culture on the Leadership Style in Georgia. In *International Black Sea University Scientific Journal* 3 (2), pp. 115–129.

Transboundary Joint Secretariat for the Southern Caucasus (TJS) (2009): Plan on Biosphere Reserves. Report to prepare for the establishment of Kazbegi Biosphere Reserve, Georgia. Tbilisi.

Transboundary Joint Secretariat for the Southern Caucasus (TJS) (2012): Impact of Dariali HPP and Rooms Hotel Plans on the Kazbegi National Park. Mission Report. Available online at http://tjs-caucasus.org/wp-content/uploads/2012/09/TJS-Kazbegi-Assessment-Report-2012.pdf, checked on January 14th, 2016.

Tucker, Ledyard R. & Lewis, Charles (1973): A reliability coefficient for maximum likelihood factor analysis. In *Psychometrika* 38 (1), pp. 1–10. DOI: 10.1007/BF02291170.

Tyson, Mandy; Covey, Judith & Rosenthal, Harriet E. S. (2014): Theory of planned behavior interventions for reducing heterosexual risk behaviors. A meta-analysis. In *Health Psychology* 33 (12), pp. 1454–1467. DOI: 10.1037/hea0000047.

United Nations International Children's Emergency Fund (UNICEF) (n.d.): Definition Child Labour. Available online at http://www.unicef.org/infobycountry/stats_popup9.html, checked on March 13th, 2016.

United States Agency for International Development (USAID) (2012a): Dairy Value Chain Assesment Stepantsminda and Dusheti Municipalies.

United States Agency for International Development (USAID) (2012b): Stepantsminda Municipality Tourism Value Chain Assesment.

Urushadze, Tengiz & Ghambashidze, Giorgi (2013): Soils of Georgia. In Yusuf Yigini, Panos Panagos, Luca Montanarella (Eds.): Soil resources of Mediterranean and Caucasus countries. Extension of the European soil database. Luxembourg: Publications Office (EUR, Scientific and technical research series, 25988), pp. 78–96.

van de Schoot, Rens; Lugtig, Peter & Hox, Joop (2012): A checklist for testing measurement invariance. In *European Journal of Developmental Psychology* 9 (4), pp. 486–492. DOI: 10.1080/17405629.2012.686740.

Volz, Jennifer (2011): Land Use Decisions in Alpine Regions of Georgia. A Pilot Study. Diploma thesis. Justus Liebig University, Gießen. Department of Political Science.

Volz, Jennifer; Chkoidze, Nino & Leonhäuser, Ingrid-Ute (2011): Mehr Lebensqualität bei größerer Nachhaltigkeit. Die sozioökonomische Lage der Bevölkerung in Bergregionen Georgiens. In *Spiegel der Forschung. Wissenschaftsmagazin der Justus-Liebig-Universität Gießen* 28 (2), pp. 32–41.

Waldhardt, Rainer; Abdaladze, Otar; Otte, Annette & Simmering, Dietmar (2011): Landschaftswandel im Kaukasus Georgiens. Interdisziplinäre Forschung für eine nachhaltigere Zukunft. In *Spiegel der Forschung. Wissenschaftsmagazin der Justus-Liebig-Universität Gießen* 28 (2), pp. 4–15.

Weiber, Rolf & Mühlhaus, Daniel (2014): Strukturgleichungsmodellierung. Eine anwendungsorientierte Einführung in die Kausalanalyse mit Hilfe von AMOS, SmartPLS und SPSS. 2., erw. und korr. Aufl. Berlin: Springer Gabler (Springer-Lehrbuch). Available online at http://dx.doi.org/10.1007/978-3-642-35012-2.

World Bank (2006a): Georgia - Joint IDA-IMF Staff Advisory Note on the Poverty Reduction Strategy Paper. Second Progress Report. Report No. 37356-GE, September 25. World Bank. Washington, DC. Available online at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2006/10/11/000160016_20061011094722/Rendered/PDF/37356.pdf, checked on March 13th, 2016.

World Bank (2006b): Rural Infrastructure in Georgia – Improving Service Delivery. Volume I: Main Report. Edited by World Bank. Washington, DC. Available online at http://documents.worldbank.org/curated/en/2006/12/7314097/georgia-rural-infrastructure-georgia-improving-service-delivery-vol-1-2-main-report, checked on July 22nd, 2015.

World Bank (2011): Georgia. Poverty Dynamics, 2003-2010. Washington, DC. Available online at http://documents.worldbank.org/curated/en/2011/06/15549957/georgia-poverty-dynamics-2003-2010, checked on July 24th, 2015.

World Bank (2015a): Data on Georgia. Available online at http://data.worldbank.org/country/georgia, checked on March 2nd, 2015.

World Bank (2015b): Georgia. Projects and Operations. Available online at http://www.worldbank.org/projects/search?lang=en&searchTerm=&tab=map&countryshortname_exact=Georgia, checked on July 17th, 2015.

Ybarra, Oscar & Trafimow, David (1998): How Priming the Private Self or Collective Self Affects the Relative Weights of Attitudes and Subjective Norms. In *Personality and Social Psychology Bulletin* 24 (4), pp. 362–370. DOI: 10.1177/0146167298244003.

Youjae, Y. I. (1989): An investigation of the structure of expectancy-value attitude and its implications. In *International Journal of Research in Marketing* 6 (2), pp. 71–83. DOI: 10.1016/0167-8116(89)90001-3.

Yzer, Marco (2007): Does Perceived Control Moderate Attitudinal and Normative Effects on Intentions. A Review of Conceptual and Methodological Issues. In Icek Ajzen (Ed.): Prediction and change of health behavior. Applying the reasoned action approach; [symposium held in honor of Martin Fishbein's 70th birthday in March 2006 at the Annenberg School for Communication, University of Pennsylvania]. With assistance of Martin Fishbein. Mahwah, NJ: Erlbaum, pp. 111–127.

Yzer, Marco (2012): Perceived Behavioral Control in Reasoned Action Theory. A Dual-Aspect Interpretation. In *The ANNALS of the American Academy of Political and Social Science* 640 (1), pp. 101–117. DOI: 10.1177/0002716211423500.

Appendix

A 1 Questionnaire

Final Questionnaire on the Socio-economic Condition of the Population in the Districts of Kazbegi and Bakuriani

Contents

Name of interviewer: _____

Date (Day / Month / Year): _____ . _____ . _____

Beginning: _____ : _____ Ending: _____ : _____

Village: _____

Notes for interviewer:

- Notes for the interviewer are **bold**.
- Further instructions and explanations which have to be read out to the respondent are ***bold and in italics***.

Interviewer to read out:

We are working with an international research project called "AMIES", Analysing Multiple Interrelationships Between Ecological and Societal Processes in Mountainous Regions in Georgia".

In the context of this project we are interested in the living conditions in this area. In order to find out how people are living we are conducting this survey. We would appreciate it very much if you took some time to answer our questions. The questions are mainly dealing with the way you and your household practice agriculture and what kind of employment you and the members of your household have.

I. Quality of Life (Subjective Self-Assessment)

Q 1) How satisfied are you with your current living condition? *Please indicate on the scale to what extend you are satisfied with your current living condition.*

Very satisfied	Satisfied	Neither	Not satisfied	Not satisfied at all
□	□	□	□	□

II. Demographics / Data on Composition of the Household

Interviewer to read out:
I would like to ask you some details about yourself and others in your household.

Q 2) Including yourself, how many people – including children and people who leave seasonally – live here regularly as members of this household?
Write down number: [_____]
(Don't know) [88] [ ]

Q 3) How many of the people in your household leave seasonally to live somewhere else, e.g. in Tbilisi?
In winter – please indicate the number: [_____]
In summer – please indicate the number: [_____]
(Don't know) [88] [ ]

Q 4) Since when do you live in this village?
[ ] Since I was born.
[ ] Since [_____] *Please indicate the year you came to this village.*

Q 5) How many of your children do not live in your household anymore?
[_____] persons.
[ ] I have no children

Q 6) **Filter**: How many of the family members left the village?
[_____] persons. → **If the answer is 0, go on with Q 12.**

Q 7) Why did they leave the village?
[01] [ ] To work in another town / city
[02] [ ] To work in another country
[03] [ ] To study
[04] [ ] Other

Q 8) Do you have access to the following items? *Please check all correct answers. Indicate whether you have access for private purposes or for commercial purposes. If you have access for both private and commercial purposes please check both.*

		Private	Commercial	No access
[01]	Electricity	[ ]	[ ]	[ ]
[02]	Gas – during the whole year	[ ]	[ ]	[ ]

[03]	Gas – only in winter	[ ]	[ ]	[ ]
[04]	Drinking water in the yard	[ ]		[ ]
[05]	Drinking water in the house	[ ]		[ ]
[06]	Internet	[ ]		[ ]
[07]	Healthcare (doctor, hospital, etc.)	[ ]		[ ]
[08]	Telephone and / or cell phone	[ ]		[ ]
[09]	Car	[ ]		[ ]
[10]	Drinking water in the yard / neighborhood	[ ]		[ ]

Q 9) What is your nationality?

[01] [ ] Georgian
[02] [ ] Abkhazian
[03] [ ] Ossetian
[04] [ ] Azerbaijanian
[05] [ ] Russian
[06] [ ] Armenian
[07] [ ] Greek
[08] [ ] Other

For the research it is also important to know some facts about the people that live in your household. Please fill out the following household grid with the interviewer.

Note for interviewer:

Collect the details of the respondent and the other household members in the following grid[536]. Start with the head of the household and then proceed in descending order of age (= oldest first).

The grid should contain all members that are mentioned in question Q 2!

It may be useful to add the first names or initials of each household member for later reference.

Descending age order: Oldest first ---------- →

Person	1 (respondent)	2	3	4	5	6
First name (optional)						
Q 10) Sex						
Male	[1]	[1]	[1]	[1]	[1]	[1]
Female	[2]	[2]	[2]	[2]	[2]	[2]
Q 11) Year of birth						
Q 12) Relationship to respondent						
Husband / wife / partner		[1]	[1]	[1]	[1]	[1]

[536] This grid is adapted from the European Social Survey (ESS) 2004, p. 36 who collects data on household level with a similar grid.

Son / daughter (inc. step, adopted, foster, child of partner)		[2]	[2]	[2]	[2]	[2]
Parent, parent-in-law, partner's parent, step parent		[3]	[3]	[3]	[3]	[3]
Brother / sister (inc. step, adopted, foster)		[4]	[4]	[4]	[4]	[4]
Grandchild						
Other relative (Please indicate)		[5]	[5]	[5]	[5]	[5]
(Don't know)		[88]	[88]	[88]	[88]	[88]
Q 13) What is the highest level of education?						
Elementary (4-5 classes)	[1]	[1]	[1]	[1]	[1]	[1]
Not completed secondary (5-9 classes)	[2]	[2]	[2]	[2]	[2]	[2]
secondary (11 classes)	[3]	[3]	[3]	[3]	[3]	[3]
Vocational-technical	[4]	[4]	[4]	[4]	[4]	[4]
Special secondary (technical, college)	[5]	[5]	[5]	[5]	[5]	[5]
Don't know	[88]	[88]	[88]	[88]	[88]	[88]

III. Sources and Composition of Income & Employment Status

Interviewer to read out:

In order to understand what kind(s) of work contribute to your household income, we need information on what each family member does.

Note for interviewer:

Fill out the following grid using the same order of persons you used for the household grid: Start with the head of the household (=1) and then proceed in descending order of age (oldest first). Fill out the grid for <u>all</u> members of the household, including children and pensioners.

Q 14) What is the current employment status of the household head and the family members respectively? ***Please check all that apply.***	1	2	3	4	5	6
Self employed in agriculture						
Self employed in tourism						
Self employed (neither agriculture nor tourism, for example shop owner)						
Wage employee in agriculture						
Wage employee in tourism						
Wage employee (neither agriculture nor tourism)						
Occasional jobs						
Housewife / houseman						
Pensioner						
Veteran						
Disabled						
Unemployed						
In school						
At higher education institution (University)						
Other (please indicate): _____						

Q 15) How many persons of your household work in your own agricultural and / or touristic activities[537]?

[_____] persons

Q 16) How many persons of your household are in paid work outside of your own agricultural and / or touristic activities?

[_____] persons

Q 17) Do you receive financial support from family members which have left your household?

[01] [ ] Yes [02] [ ] No

If the answer is yes, how much financial support do you receive?

Please indicate the amount in Lari: _____

Q 18) Do you think that one of your children will take over your agricultural and / or touristic activities when you retire?

[01] [ ] I have no children [02] [ ] I am already retired [03] [ ] Yes [04] [ ] No

[05] [ ] Don't know

Q 19) Please consider the <u>income of all household members</u> and any income which may be received by the household as a whole. What is the <u>main</u> source of income in your household? *Only check <u>one</u> possibility!*

[01] [ ] Wage employment in the agricultural sector

[02] [ ] Wage employment in the touristic sector

[537] Agricultural and / or touristic activities: Activities which serve the production of income. By income we mean both monetary and material, e.g. the production of potatoes.

[03] [ ] Wage employment (excluding agricultural and touristic sector)
[04] [ ] Self employment in the agricultural sector
[05] [ ] Self employment in the touristic sector
[06] [ ] Self employment (excluding agricultural and touristic sector, for example shop owner)
[07] [ ] Occasional jobs

[08] [ ] Pensions
[09] [ ] Social benefits or grants
[10] [ ] Income from investment, savings, insurance or property
[11] [ ] Private transfers (e.g. payments from relatives working in foreign countries)

[12] [ ] Other
[77] [ ] (Refused)
[88] [ ] (Don't know)

Interviewer to read out:

The following questions are dealing with the household's income. We assure you that your information will be treated confidentially and will only be used for this research project.

Note for interviewer:

Please pay attention that the questions are referring to the last 12 months. It is not enough to know the income of the last month!

Q 20) What is your income composed of? *Please indicate how much Lari you gained from which activities (in the last 12 months).*

Agricultural plant production (in GEL)		[_____] [01]
Livestock production (in GEL):		[_____] [02]
Tourism (in GEL)	[_____] [03]	
Non-agricultural employment (in GEL):	[_____] [04]	
Public transfers (pensions, social benefits, etc.) (in GEL):	[_____] [05]	
Private transfers from friends and family (in GEL):	[_____] [06]	
Leasing out land (in GEL):	[_____] [07]	
Other (in GEL):	[_____] [08]	

Q 21) If you add up the income from all sources, how high was the income of your household in the last 12 months? *Please indicate in Lari.*

[_____] Lari [ ] Refused [ ] Don't know

IV. Land Reform (1990ies)

Q 22) Before the land reform, did you work in a kolkhoz or did you cultivate land on your own?

[01] [ ] In a kolkhoz
[02] [ ] Cultivated land on my own
[03] [ ] Worked in a sanatorium
[04] [ ] Other

Note for interviewer:

For the next questions dealing with "hectares": If the respondent has difficulties specifying the size of his land in hectares, ask him to indicate in square meters and note down that the number refers to square meters.

Q 23) How much land did you own before the land reform? *Please add up all the parcels you owned at that time and indicate the total amount in hectares.*

[_____] hectares
[ ] I only owned the land around my house
[ ] No land at all

Q 24) **Filter**: How much land did you receive through the land reform? *Please add up all the land parcels you received through the land reform, but don't include the land you already owned before the land reform.*

[_____] hectares
[ ] No land at all → **If the answer is "No land at all", go on with Q 26**

Q 25) Were you able to legally register all the land you received through the land reform?

[01] [ ] Yes, I was
[02] [ ] No, I wasn't
[03] [ ] Partly yes and partly no. *Please indicate how much land you could register in percent:* [_____] %

V. Land Use

Q 26) **Filter:** How much land do you own today? *If you own several parcels please add these up and indicate the total amount in hectares.*

[_____] hectares
[ ] No land at all → **If the answer is "No land at all", go on with Q 33.**

Q 27) Are there governmental guidelines which restrict you in using your land?

[01] [ ] Yes [02] [ ] No [03] [ ] Don't know

Q 28) How many land parcels do you cultivate? *Please think of all the land you cultivate, that is e.g. also land which you may have leased from someone else. Please indicate the number of parcels.*

[_____] parcels

Interviewer to read out:

Please list each of these parcels in the following table.

Note for interviewer:

Give the respondent the table and write his / her answers into the table.

	Q 29) What kind of land is the parcel?	**Q 30) How large is the parcel?** *(Indicate in hectares.)*	**Q 31) What is your ownership status of the parcel?**	**Q 32) On a scale from 1 (= very good) to 5 (= very bad), how would you describe the land quality of the parcel?**

	1 = Land around the house (e.g. yard, garden) 2 = Arable land 3 = Rotational fallow land 4 = Abandoned fallow land 5 = Hay meadows 6 = Pasture (land for grazing)		1 = Land owned by a family member* 2 = Leased land 3 = Use rights (communal ownership) 4 = Other	1 = very good 2 = good 3 = average 4 = bad 5 = very bad
1		m^2 / ha		
2		m^2 / ha		
3		m^2 / ha		
4		m^2 / ha		
5		m^2 / ha		
6		m^2 / ha		
7		m^2 / ha		
8		m^2 / ha		
9		m^2 / ha		
10		m^2 / ha		

* The family member does not have to live in the household himself / herself. Decisive is whether the owner of the land parcel is a member of the family.

Interviewer to read out:

The following question deals with "agricultural production". By "agricultural production" we mean the production of food and goods such as for example crops, potatoes or milk through agricultural.

Q 33) **Filter:** Are you engaged in agricultural production?

[01] [ ] Yes

[02] [ ] No → **If the answer is "No", go to Q 36**

Q 34) For how many years have you been active in agriculture?

[_____] years

Land Owned by the Household / Common pastures (/ Social capital)

Interviewer to read out:

The answers to the following question contain the term "abandoned fallow land". By "abandoned fallow land" we mean land which is no longer used for agricultural purposes.

Q 35) Of the land you own: How many percent is being used as the following? *Please give the respective amounts in percent.*

Arable land:	[_____] %
Mainly pasture (for grazing):	[_____] %
Mainly hay meadow:	[_____] %
Rotational fallow land:	[_____] %
Abandoned fallow land:	[_____] %
Land around the house:	[_____] %
Other:	[_____] %.

Q 36) **Filter:** Do you own livestock (e.g. cows, sheep, chicken)?

[01] [ ] Yes
[02] [ ] No → **If the answer is no, go to Q 65.**

Q 37) Is there a herdsman who is paid by the village community to take care of the animals of several people?

[01] [ ] No, there isn't.
[02] [ ] Yes, but he doesn't take care of any of my animals.
[03] [ ] Yes, he is also taking care of some of my animals.

Q 38) Where do you let your livestock graze?

[01] [ ] On my own, private pasture
[02] [ ] On common pastures along with the livestock from others
[03] [ ] Other
[04] [ ] I don't know where my livestock grazes

Q 39) Do you have grasslands which you use specifically in order to grow hay for the winter? If so, how big are these?

[01] [ ] Don't have such meadows
[02] [ ] [_____] hectares

Q 40) Do you have storage facilities for fodder, e.g. hay, for the winter?

[01] [ ] No, we don't
[02] [ ] Yes, we have closed storage facilities
[03] [ ] Yes, but the fodder is not sheltered from bad weather

Q 41) **Filter:** Would you like to cultivate more land than you do at the moment?

[01] [ ] Yes → **If the answer is yes, go to Q 43.**
[02] [ ] No

Q 42) Why don't you cultivate more land although you would like to? *Please check all correct answers.*

[01] [ ] Don't have the money to buy or lease more land
[02] [ ] Don't have the money to buy fertilizer
[03] [ ] Don't have the manpower to cultivate more land
[04] [ ] Don't have the time to cultivate more land
[05] [ ] Not enough earning possibilities in comparison with th
[06] [ ] Because the soil is eroded
[07] [ ] Because of a lack of agricultural machinery
[08] [ ] Other (please indicate): [_____]

Agricultural activities

Interviewer to read out:

In order to find out more about the way agriculture is carried out in this region, we need some information on the kinds of crop you grow and on the size of the harvest for each crop. I will now show you a grid and ask you to fill out the grid with me.

Note for interviewer:

Show the grid to the respondent and ask him / her for the information, but you should be the one writing down the answers!

Please make sure to ask Q 43 also for those products which are not produced by the household, since it is possible, that these products are bought.

	Q 43) What kind(s) of crop do you cultivate?	**Q 44) How large is the area on which you cultivate the crop?**	**Q 45) What was the yield of the crop (in the last 12 months)?**	**Q 46) How much (of your own production) did you consume yourself (in the last 12 months)?**	**Q 47) How much did you sell (in the last 12 months)?**	**Q 48) How much of the crop did you buy for your own consumption (in the last 12 months)?**
	Check all that apply.	*Indicate in hectares.*	*Indicate in kg.*	*Indicate in kg.*	*Indicate in kg.*	*Indicate in kg.*
Wheat		m^2 / ha	kg	kg	kg	kg
Barley		m^2 / ha	kg	kg	kg	kg
Oat		m^2 / ha	kg	kg	kg	kg
Maize		m^2 / ha	kg	kg	kg	kg
Other grain		m^2 / ha	kg	kg	kg	kg
Potatoes		m^2 / ha	kg	kg	kg	kg
Cabbage		m^2 / ha	kg	kg	kg	kg
Turnips		m^2 / ha	kg	kg	kg	kg
Pumpkin		m^2 / ha	kg	kg	kg	kg
Onions		m^2 / ha	kg	kg	kg	kg
Tomatoes		m^2 / ha	kg	kg	kg	kg
Cucumbers		m^2 / ha	kg	kg	kg	kg
Beans		m^2 / ha	kg	kg	kg	kg

Sunflower		m^2 / ha	kg	kg	kg	kg
Apples		m^2 / ha	kg	kg	kg	kg
Herbs		m^2 / ha	kg	kg	kg	kg
Herbages such as e.g. clover as fodder for animals		m^2 / ha	kg	kg	kg	kg

Q 49) **Filter:** Do you own a greenhouse?
[01] [ ] No → **If the answer is no, go to Q 52.**
[02] [ ] Yes, but we don't use it anymore
[03] [ ] Yes, we still use the greenhouse

Q 50) How large is the area of the greenhouse? *Please indicate in m^2.*
[_____] m^2

Q 51) Which fruits and vegetables do you grow in the greenhouse? *Please list the things you grow.*
_____

_____

Animal husbandry

Interviewer to read out:
In order to also take into account the livestock you own the following grids concentrates on the kind and amount of animals you own and the goods the animals produce. Again, please fill out the grids with me.

	Q 52) What kind(s) of animal do you own?	**Q 53) How many animals do you own of this kind?**	**Q 54) How many did you consume yourself (in the last 12 months)?**	**Q 55) How many did you sell (in the last 12 months)?**	**Q 56) How many did you buy for your own consumption (in the last 12 months)?**
	Check all that apply.	*Indicate the number of animals.*			
Cows					
Calves					
Pigs					
Horses					
Poultry					

Sheep					
Goats					
Dogs					
Rabbits					
Beehives					
If you own any other kinds of animals as those mentioned above, please indicate these in the following lines.					

	Q 57) <u>What kind(s)</u> of animal products do you manufacture?	**Q 58) How much of these products did you <u>manufacture</u> (in the last 12 months)?**	**Q 59) How much did you <u>consume</u> yourself (in the last 12 months)?**	**Q 60) How much did you <u>sell</u> (in the last 12 months)?**	**Q 61) How much did you <u>buy</u> for your own consumption (in the last 12 months)?**
	Check all that apply.	*Indicate in the given units.*			
Wool		kg	kg	kg	kg
Meat		kg	kg	kg	kg
Fur		number	number	number	number
Cowskins		number	number	number	number
Sheepskin		number	number	number	number
Goatskin		number	number	number	number
Milk		l	l	l	l
Cheese		kg	kg	kg	kg
Butter		kg	kg	kg	kg
Sour cream		kg	kg	kg	kg
Eggs		number	number	number	number
Honey		kg	kg	kg	kg
If you manufacture any other animal products as those mentioned above, please indicate these in the following lines.					

Q 62) Approximately how much of your production do you sell and how much do you use for self-supply? *Please give the respective amounts in percent.*

Selling: [_____] %
Self consumption: [_____] %
Other: [_____] %.

Q 63) Where do you sell your agricultural products (including both animal products and crops)? *Please check all that apply.*

[01] [ ] I don't sell any products.
[02] [ ] Directly on the farm
[03] [ ] In the streets in the village I live in
[04] [ ] In a store in the village I live in
[05] [ ] On a farmer's market in the village I live in
[06] [ ] In a store in the surrounding villages
[07] [ ] On a farmer's market in the surrounding villages
[08] [ ] In bigger cities
[09] [ ] Other

Q 64) To whom do you sell your products? *Please check all that apply.*

[08] [ ] I don't sell any products.
[01] [ ] Family and friends
[02] [ ] Neighbors and villagers
[03] [ ] People from surrounding villages
[04] [ ] Tourists
[05] [ ] Traders
[06] [ ] Processing industry
[07] [ ] Other

VI. Module on Tourism Supply

Interviewer to read out:

As tourism is another business branch, the following questions are asking some information on whether you are involved in tourism and if so, how.

Q 65) **Filter:** Do you offer any of the following services to tourists? *Please check all that apply.*

[01] [ ] Hotel accommodation (and service)
[02] [ ] ("Private") Guest house (or rooms) accommodation (and service)
[03] [ ] "Bed and Breakfast"
[04] [ ] Lead a café or similar enterprise
[05] [ ] Lend skiing equipment
[06] [ ] Lend hiking equipment
[07] [ ] Lend other equipment
[08] [ ] Lend horses and / or carriages
[09] [ ] Sell maps
[10] [ ] Offer skiing lessons
[11] [ ] Offer mountain / hiking tours (serve as a guide)
[12] [ ] Offer entertainment (e.g. theater, cinema)
[13] [ ] Other
[14] [ ] I don't offer any services for tourists → **Continue with Q 79.**

Q 66) How do visitors find out about your services?
[01] [ ] Via internet
[02] [ ] Via tourist agency
[03] [ ] Via newspaper
[04] [ ] Via TV
[05] [ ] Friends told them about us
[06] [ ] Neighbors gave them our address
[07] [ ] Visitors randomly choose our place
[08] [ ] Other

Q 67) For how long have you been involved in tourism activities? *Please indicate the number of years.*
[_____] years

Q 68) How much money did you spend on starting tourism supply (in the last 12 months)?
Total amount of spending (in GEL):[_____]

Q 69) How much money did you spend on expanding tourism supply (in the last 12 months)?
Total amount of spending (in GEL): [_____]

Q 70) Why did you start working in tourism? *Please check all that apply.*
[01] [ ] My parents were already involved in tourism
[02] [ ] It's easier than farming
[03] [ ] Compared to farming the income is higher
[04] [ ] Compared to farming or (local) business the prestige is higher
[05] [ ] Tourism development is supported by the government
[06] [ ] Tourism will be a very lucrative business in the future
[07] [ ] I changed to tourism because almost everyone else is involved in tourism
[08] [ ] To increase my income
[09] [ ] Other (please indicate): [_____]

Q 71) **Filter:** Do you offer accommodation?
[01] [ ] Yes
[02] [ ] No → **If the answer is no, go to Q 79.**

Q 72) Do you offer meals if these are requested by the guests?
[01] [ ] No.
[02] [ ] Yes, up to three meals a day.
[03] [ ] Yes, up to two meals a day.
[04] [ ] Yes, one meal a day.

Q 73) How many rooms do you offer? *Please indicate the number of rooms.*
[_____] rooms

Q 74) How many beds do you offer? *Please indicate the number of beds.*
[_____] beds

Q 75) How many nights was your guest house or hotel booked in the last 12 months? *Please indicate the number of nights.*
[_____] nights

Q 76) How many nights was your guest house / hotel open during the last 12 months? *Please indicate the number of nights.*

[_____] nights

Q 77) How large was the share of income which you made from tourism activities compared with your total income in the last 12 months? (How large is the share from tourism activities' income in total household budget?) *Please indicate in percent.*

[_____] %

Q 78) Which financial sources do use to pay for the development or maintenance of your touristic activities? *Please check <u>all</u> that apply!*

[01] [ ] Family savings
[02] [ ] Loan from bank
[03] [ ] I borrowed money from friends / relatives / neighbors
[04] [ ] I sold my land and invested the money in tourism
[05] [ ] I sold cattle/sheep and invested the money in tourism
[06] [ ] I reinvest the income from my tourism activities
[07] [ ] Other (please indicate): [_____]

Q 79) In your opinion, what is the main obstacle for tourism development in your region? *Only check <u>one</u> possibility!*

[01] [ ] Bad infrastructure
[02] [ ] Unstable economy and / or economic environment
[03] [ ] No clear governmental policy
[04] [ ] Few places for entertainment
[05] [ ] No clear guidelines for service quality and standards
[06] [ ] Lack of transportation
[07] [ ] Other
[88] [ ] Don't know

The next question only concerns households that are <u>not</u> involved in tourism! Households that <u>are</u> involved in tourism can skip to Q 81.

Q 80) Why don't you offer any service(s) for tourists? *Please check all that apply!*

[01] [ ] I don't have enough money for the initial investment
[02] [ ] I don't have enough room to do so
[03] [ ] I live too far off
[04] [ ] I don't think it would be profitable
[05] [ ] I make enough money without tourism
[06] [ ] I don't want to
[07] [ ] Other (please indicate): [_____]
[08] [ ] Don't know

VII. Module on Influence and Cooperation

Q 81) My actions affect the living conditions of my children in the future.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 82) I feel as if it doesn't matter what I do.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 83) I accept help from others.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 84) "Being your own boss" puts a lot of pressure on you.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 85) Working in a group impedes my work.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 86) Being employed is less worrisome than leading your own enterprise.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 87) I don't like working in a group.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 88) No matter what I do, I can not improve the living conditions of my family.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 89) "Being your own boss" gives you a lot of freedom.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 90) Working in a group can help you achieve things a single person can not achieve.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 91) I like taking risks.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 92) Organizing things is difficult for me.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 93) I like working with others to achieve common goals.

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 94) Leading a better life is ...

Very pleasant	Pleasant	Neither	Unpleasant	Very unpleasant
□	□	□	□	□

Q 95) How often do you feel ill or tired?

Very rarely	Rarely	Neither	Frequently	Very frequently
□	□	□	□	□

Q 96) How often do you encounter unanticipated events that decrease your time budget?

Very rarely	Rarely	Neither	Frequently	Very frequently
□	□	□	□	□

Q 97) Increasing my income is ...

Very pleasant	Pleasant	Neither	Unpleasant	Very unpleasant
□	□	□	□	□

Q 98) What my friends think I should do matters to me.

Very much	Much	Neither	Not	Not at all
□	□	□	□	□

Q 99) How likely is it for you to get a loan from a bank?

Very likely	Likely	Neither	Unlikely	Very unlikely
□	□	□	□	□

Q 100) How likely is it for you to find workers you can hire?

Very likely	Likely	Neither	Unlikely	Very unlikely
□	□	□	□	□

Q 101) Doing what other people in my neighborhood do is important to me.

Very much	Much	Neither	Not	Not at all
□	□	□	□	□

Q 102) Risking to lose money is ...

Very pleasant	Pleasant	Neither	Unpleasant	Very unpleasant
□	□	□	□	□

Q 103) Being more stressed is ...

Very pleasant	Pleasant	Neither	Unpleasant	Very unpleasant
□	□	□	□	□

Q 104) Losing free time is ...

Very pleasant	Pleasant	Neither	Unpleasant	Very unpleasant
□	□	□	□	□

Q 105) What the government approves of is important to me.

Very much	Much	Neither	Not	Not at all
□	□	□	□	□

Q 106) How often do unanticipated financial requirements (e.g. to replace broken tools or machinery) place burdens on your financial resources?

Very rarely	Rarely	Neither	Frequently	Very frequently
□	□	□	□	□

VIII. Module on Intended Behavior – Enhancing Tourism Supply

Q 107) If I encountered unanticipated events that place demands on my time it would make it more difficult for me to enhance tourism supply in the next year. [pbc pow. cont.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 108) Most people who are important to me think that [sn dir.] enhance tourism supply in the next year.

I have to	I should	neither	I don't have to	I should not
□	□	□	□	□

Q 109) Whether I enhance tourism supply in the next year is entirely up to me. [pbc dir.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 110) I expect to enhance tourism supply in the next year [int]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 111) Enhancing tourism supply in the next year will cause me to be more stressed. [att. indir.]

Very likely	Likely	Neither	Unlikely	Very unlikely
□	□	□	□	□

Q 112) Other people in my neighborhood [sn norm. bel.]

would	would rather	neither	would rather not	would not
□	□	□	□	□

enhance tourism supply in the next year.

Q 113) Enhancing tourism supply in the next year will help me lead a better life. [att. indir.]

Very likely	Likely	Neither	Unlikely	Very unlikely
□	□	□	□	□

Q 114) I intend to enhance tourism supply in the next year. [int]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 115) If I had unanticipated financial requirements place burdens on my financial resources it would make it more difficult for me to enhance tourism supply in the next year. [pbc pow. cont.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 116) How likely is it for you to enhance tourism supply in the next year? [int]

Very likely	Likely	Neither	Unlikely	Very unlikely
□	□	□	□	□

Q 117) For me to enhance tourism supply in the next year is [att. sem. diff.]

Harmful	□	□	□	□	□	Beneficial
Good	□	□	□	□	□	Bad
Pleasant	□	□	□	□	□	Unpleasant
Worthless	□	□	□	□	□	Valuable
Expensive	□	□	□	□	□	Cheap
Helpful	□	□	□	□	□	Useless
Easy	□	□	□	□	□	Difficult
Awful	□	□	□	□	□	Wonderful
Dangerous	□	□	□	□	□	Safe
Right	□	□	□	□	□	Wrong
Careful	□	□	□	□	□	Reckless
Smart	□	□	□	□	□	Stupid

Q 118) Enhancing tourism supply in the next year will increase my income. [att. indir.]

Very likely	Likely	Neither	Unlikely	Very unlikely
□	□	□	□	□

Q 119) For me to enhance tourism supply in the next year is [pbc dir.]

very easy	easy	neither	diffcult	very diffcult.
□	□	□	□	□

Q 120) It is expected of me that I enhance tourism supply in the next year. [sn dir.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 121) Enhancing tourism supply in the next year will mean risking the loss of money [NEW]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 122) The government allows me to enhance tourism supply in the next year. [sn dir.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 123) Enhancing tourism supply in the next year will cost me free time. [att. indir.]

Very likely	Likely	Neither	Unlikely	Very unlikely
□	□	□	□	□

Q 124) My family thinks that [sn norm. bel.]

I have to	I should	neither	I don't have to	I should not
□	□	□	□	□

enhance tourism supply in the next year.

Q 125) My friends [sn norm. bel.]

would	would rather	neither	would rather not	would not
□	□	□	□	□

approve of me enhancing tourism supply in the next year.

Q 126) If I had a loan from a bank it would make it easier to enhance tourism supply in the next year [NEW]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 127) My family's approval of me enhancing tourism supply in the next year is important to me. [sn mot. comp.]

Very much	Much	Neither	Not	Not at all
□	□	□	□	□

Q 128) People who are important to me want me to enhance tourism supply in the next year. [sn dir.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 129) I feel obliged to enhance tourism supply in the next year. [sn dir.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 130) If there were workers I could hire it would make it easier to enhance tourism supply in the next year [NEW]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 131) I am confident that I could enhance tourism supply in the next year if I wanted to. [pbc dir.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 132) For me to enhance tourism supply in the next year is [pbc dir.]

very possible	possible	neither	impossible	very impossible.
□	□	□	□	□

Q 133) The decision to enhance tourism supply in the next year is beyond my control. [pbc dir.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 134) I plan to enhance tourism supply in the next year. [int]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

Q 135) If I felt ill or tired it would make it more difficult for me to enhance tourism supply in the next year. [pbc pow. cont.]

Strongly agree	Agree	Neither	Disagree	Strongly disagree
□	□	□	□	□

A 2 Tables on Numbers of Pigs, Horses, Goats, Dogs, Rabbits and Beehives

Table 39: Number of pigs

Number of pigs	Stepants-minda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	87	94.6	57	93.4	52	94.5	74	80.4	270	90.0
1	2	2.2	4	6.6	3	5.5	14	15.2	23	7.7
2	2	2.2					2	2.2	4	1.3
3							1	1.1	1	0.3
5	1	1.1							1	0.3
6							1	1.1	1	0.3
Total (valid)	**92**	**100**	**61**	**100**	**55**	**100**	**92**	**100**	**300**	**100**
Don't know (= missing)			1	-					1	-
Mean (SD)*	2.20	(1.64)	1.00	(0.00)	1.00	(0.00)	1.50	(1.25)	1.50	(1.20)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

Table 40: Number of horses

Number of horses	Stepants-minda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	88	95.7	52	85.2	54	98.2	83	90.2	277	92.3
1	2	2.2	6	9.8	1	1.8	4	4.3	13	4.3
2			3	4.9			3	3.3	6	2.0
5	1	1.1					1	1.1	2	0.7
6							1	1.1	1	0.3
8	1	1.1							1	0.3
Total (valid)	**92**	**100**	**61**	**100**	**55**	**100**	**92**	**100**	**300**	**100**
Don't know (= missing)			1	-					1	-
Mean (SD)*	3.75	(3.40)	1.33	(0.50)	1.00	(0.00)	2.33	(1.87)	2.13	(1.94)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

Table 41: Number of goats

Number of goats	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	87	94.6	60	96.8	55	100.0	90	97.8	292	97.0
1							1	1.1	1	0.3
2	1	1.1	1	1.6					2	0.7
3	2	2.2							2	0.7
5	1	1.1							1	0.3
7							1	1.1	1	0.3
10			1	1.6					1	0.3
40	1	1.1							1	0.3
Total (valid)	**92**	**100**	**62**	**100**	**55**	**100**	**92**	**100**	**301**	**100**
Mean (SD)*	10.60	(16.47)	6.00	(5.66)	-	-	4.00	(4.24)	8.11	(12.29)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

Table 42: Number of dogs

Number of dogs	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	70	80.5	48	78.7	40	76.9	62	68.1	220	75.6
1	12	13.8	10	16.4	8	15.4	19	20.9	49	16.8
2	2	2.3	2	3.3	3	5.8	7	7.7	14	4.8
3			1	1.6	1	2	1	1.1	3	1.0
4	1	1.1					1	1.1	2	0.7
10	2	2.3					1	1.1	3	1.0
Total (valid)	**87**	**100**	**61**	**100**	**52**	**100**	**91**	**100**	**291**	**100**
Don't know (= missing)	5	-	1	-	3	-	1	-	10	-
Mean (SD)*	2.35	(2.98)	1.31	(0.63)	1.42	(0.67)	1.72	(1.75)	1.75	(1.88)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

Table 43: Number of rabbits

Number of rabbits	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	91	98.9	62	100.0	43	78.2	83	90.2	279	92.7
1-5	1	1.1			8	14.5	7	7.6	16	5.3
6-10					4	7.3	1	1.1	5	1.7
20							1	1.1	1	0.3
Total (valid)	**92**	**100**	**62**	**100**	**55**	**100**	**92**	**100**	**301**	**100**
Mean (SD)*	1.00	(0.00)	-	-	4.50	(3.18)	5.56	(6.06)	4.77	(4.50)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

Table 44: Number of beehives

Number of beehives	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	90	97.8	60	96.8	55	100.0	85	92.4	290	96.3
1-10	2	2.2					4	4.3	6	2.0
11-20							2	2.2	2	0.7
30			1	1.6					1	0.3
50			1	1.6					1	0.3
80							1	1.1	1	0.3
Total (valid)	**92**	**100**	**62**	**100**	**55**	**100**	**92**	**100**	**301**	**100**
Mean (SD)*	3.00	(1.4)	40.00	(14.1)	-	-	18.43	(27.6)	19.55	(24.8)

* Mean and standard deviation (SD) are calculated based on those households that own this kind of animal and indicated the number of animals they owned. Households that indicated 0 were excluded. Source: Own data.

A 3 Tables on Amounts of Produced Sour Cream, Wool and Honey

Table 45: Amount of produced sour cream in kg

Amount of manufactured sour cream in kg	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	72	83.7	54	91.5	48	90.6	85	95.5	259	90.2
1-25	9	10.5	3	5.1	5	9.4	3	3.4	20	7.0
26-50	1	1.2	1	1.7					2	0.7
51-75							1	1.1	1	0.3
76-100	2	2.3	1	1.7					3	1.0
200	2	2.3							2	0.7
Total (valid)	**86**	**100**	**59**	**100**	**53**	**100**	**89**	**100**	**287**	**100**
Do not know (= missing)	6		3		2		3		14	
Mean (SD)*	50	(72)	2	(31)	9	(3)	23	(3)	35	(55)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

Table 46: Amount of produced wool in kg

Amount of manufactured wool in kg	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	84	92.3	59	96.7	55	100.0	88	95.7	286	95.7
1-50	5	5.5	1	1.6			2	2.2	8	2.7
60			1	1.6			1	1.1	2	0.7
200	1	1.1					1	1.1	2	0.7
750	1	1.1							1	0.3
Total (valid)	91	100.0	**61**	**100.0**	**55**	**100.0**	**92**	**100.0**	**299**	**100**
Do not know (= missing)	1		1						2	
Mean (SD)*	157	(269)	73	(48)	96	(68)	91	(78)	111	(203)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

Table 47: Amount of produced honey in kg

Amount of manufactured honey in kg	Stepantsminda		Kazbegi villages		Bakuriani		Borjomi villages		Total	
	N	%	N	%	N	%	N	%	N	%
0	89	97.8	60	96.8	55	100.0	87	95.6	291	97.3
20	1	1.1					2	2.2	3	1.0
30	1	1.1					1	1.1	2	0.7
150			1	1.6					1	0.3
300			1	1.6					1	0.3
2080							1	1.1	1	0.3
Total (valid)	**91**	**100**			**55**	**100**	**91**	**100**	**299**	**100**
Do not know (= missing)	1						1		2	
Mean (SD)*	25	(7)	225	(106)	-	-	538	(1028)	331	(714)

* Mean and standard deviation (SD) are calculated based on those households that manufacture this kind of product and indicated the amount of production. Households that indicated 0 were excluded. Source: Own data.

A 4 Descriptive Information on Cultivated Areas and Yields of Crops

Table 48: Mean, median and standard deviation of cultivated areas and yields of crops

	Area in m²				Yield in kg			
	Valid n	Mean	Median	SD	Valid n	Mean	Median	SD
Potatoes	(n=211 of 230)	46980	300	358133	(n=222 of 230)	388	300	440
Herbs	(n=83 of 140)	670	10	5491	(n=76 of 140)	11	10	9
Apples	(n=51 of 81)	133	25	259	(n=69 of 81)	161	60	342
Cabbages	(n=37 of 54)	215	50	521	(n=45 of 54)	117	80	113
Onions	(n=28 of 47)	53	30	65	(n=32 of 47)	27	10	33
Fodder	(n=30 of 47)	3219	1100	9161	(n=25 of 47)	2585	350	4964
Beans	(n=25 of 37)	171	80	298	(n=26 of 37)	25	20	28
Cucumbers	(n=15 of 21)	72	20	98	(n=16 of 21)	39	30	45
Tomatoes	(n=5 of 8)	60	10	85	(n=4 of 8)	45	30	37
Maize	(n=2 of 5)	550	550	636	(n=1 of 5)	150	150	
Pumpkin	(n=2 of 5)	28	28	32	(n=3 of 5)	43	50	31
Wheat	(n=0 of 2)				(n=0 of 2)			
Turnips	(n=0 of 2)				(n=1 of 2)	30	30	
Sunflower	(n=1 of 2)	5	5		(n=0 of 2)			
Barley	(n=0 of 1)				(n=0 of 1)			
Oat	(n=0 of 1)				(n=0 of 1)			
Other grain	(n=0 of 1)				(n=0 of 1)			

Note: SD = standard deviation. Source: Own data.

A 5 Tables on Yields of Cultivated Herbs and Apples

Table 49: Yield of herbs by area of herbs

	Yield of herbs in kg (last 12 months)	Area of cultivated herbs in m²						
		1-10	11-20	21-30	31-40	41-50	51-highest	Total
Stepantsminda (n=13 of 45)	1-5	38.5%						38.5%
	6-10	23.1%						23.1%
	11-15			7.7%			7.7%	15.4%
	16-20						7.7%	7.7%
	30			7.7%				7.7%
	40					7.7%		7.7%
	Total	61.5%		15.4%		7.7%	15.4%	100.0%
Kazbegi villages (n=12 of 23)	1-5	33.3%			8.3%			41.7%
	6-10	8.3%		8.3%			16.7%	33.3%
	11-15			8.3%				8.3%
	16-20	8.3%					8.3%	16.7%
	Total	50.0%		16.7%	8.3%		25.0%	100.0%
Bakuriani (n=13 of 28)	1-5	30.8%						30.8%
	6-10	23.1%		7.7%		23.1%	7.7%	61.5%
	30						7.7%	7.7%
	Total	53.8%		7.7%		23.1%	15.4%	100.0%
Borjomi villages (n=17 of 44)	1-5	35.3%						35.3%
	6-10	17.6%	5.9%			17.6%		41.2%
	11-15	5.9%						5.9%
	16-20	5.9%						5.9%
	50						11.8%	11.8%
	Total	64.7%	5.9%			17.6%	11.8%	100.0%

Source: Own data.

Table 50: Yield of apples by area of apples

	Yield of cultivated apples in kg (last 12 months)	Area of cultivated apples in m²					
		1-50	51-100	101-200	201-300	301-highest	Total
Stepantsminda (n=22 of 27)	0	4.5%					4.5%
	1-50	18.2%	9.1%	4.5%		9.1%	40.9%
	51-100	22.7%		4.5%			27.3%
	101-150	4.5%				4.5%	9.1%
	151-200				4.5%		4.5%
	300	4.5%					4.5%
	2000	4.5%				4.5%	9.1%
	Total	59.1%	9.1%	9.1%	4.5%	18.2%	100.0%
Kazbegi villages (n=9 of 18)	1-50	11.1%	11.1%		22.2%		44.4%
	51-100	22.2%					22.2%
	151-200	11.1%		11.1%			22.2%
	400			11.1%			11.1%
	Total	44.4%	11.1%	22.2%	22.2%		100.0%
Bakuriani (n=7 of 14)	0	14.3%					14.3%
	1-50	57.1%					57.1%
	51-100			14.3%			14.3%
	500	14.3%					14.3%
	Total	85.7%		14.3%			100.0%
Borjomi villages (n=12 of 22)	0	8.3%				8.3%	16.7%
	1-50	25.0%		8.3%			33.3%
	51-100	33.3%	8.3%				41.7%
	151-200	8.3%					8.3%
	Total	75.0%	8.3%	8.3%		8.3%	100.0%

Source: Own data.

A 6 Bivariate Pearson Correlations Between all Variables of the Model

		int1br	int2br	atd10br	atd11br	atd12br	snd1br	snd3br	snd4br
int1br	R	1	.823	.264	.273	.256	.428	.365	.568
	Sig.		.000	.000	.000	.000	.000	.000	.000
	N	245	244	215	223	227	245	242	245
int2br	R	.823	1	.283	.258	.256	.434	.401	.585
	Sig.	.000		.000	.000	.000	.000	.000	.000
	N	244	244	214	222	226	244	241	244
atd10br	R	.264	.283	1	.889	.819	.344	.322	.344
	Sig.	.000	.000		.000	.000	.000	.000	.000
	N	215	214	215	215	215	215	213	215
atd11br	R	.273	.258	.889	1	.858	.379	.346	.347
	Sig.	.000	.000	.000		.000	.000	.000	.000
	N	223	222	215	223	223	223	221	223
atd12br	R	.256	.256	.819	.858	1	.260	.346	.366
	Sig.	.000	.000	.000	.000		.000	.000	.000
	N	227	226	215	223	227	227	225	227
snd1br	R	.428	.434	.344	.379	.260	1	.360	.401
	Sig.	.000	.000	.000	.000	.000		.000	.000
	N	245	244	215	223	227	247	242	245
snd3br	R	.365	.401	.322	.346	.346	.360	1	.484
	Sig.	.000	.000	.000	.000	.000	.000		.000
	N	242	241	213	221	225	242	242	242
snd4br	R	.568	.585	.344	.347	.366	.401	.484	1
	Sig.	.000	.000	.000	.000	.000	.000	.000	
	N	245	244	215	223	227	245	242	245

		pbcd1br	pbcd2br	pbcd4br	snb1br	snb2br	snb3br	snb4br	pbcb1r	pbcb2r	pbcb3r	pbcb4r	pbcb5r	exp.
int1br	R	.277	.338	.596	.417	.177	.520	.374	.175	.045	.243	.163	.032	.324
	Sig.	.000	.000	.000	.000	.006	.000	.000	.007	.489	.000	.011	.620	.000
	N	244	245	245	244	244	244	244	235	242	240	242	242	245
int2br	R	.239	.336	.625	.417	.182	.550	.342	.236	.022	.319	.189	.046	.374
	Sig.	.000	.000	.000	.000	.004	.000	.000	.000	.736	.000	.003	.475	.000
	N	243	244	244	244	243	243	243	234	241	240	241	241	244
atd10br	R	.152	.019	.244	.281	.111	.463	.437	.122	-.020	.095	-.046	-.012	.128
	Sig.	.026	.782	.000	.000	.106	.000	.000	.081	.769	.168	.509	.861	.060
	N	214	215	215	214	214	214	214	205	212	210	212	213	215
atd11br	R	.111	.045	.207	.295	.077	.504	.480	.133	-.051	.114	-.017	-.013	.174
	Sig.	.098	.502	.002	.000	.252	.000	.000	.052	.451	.093	.807	.847	.009
	N	222	223	223	222	222	222	222	213	220	218	220	221	223
atd12br	R	.106	.019	.206	.260	.048	.510	.460	.152	-.022	.171	.009	-.024	.116
	Sig.	.111	.772	.002	.000	.477	.000	.000	.026	.739	.011	.899	.719	.082
	N	226	227	227	226	226	226	226	217	224	222	224	225	227
snd1br	R	.119	.172	.353	.320	.104	.495	.426	.143	-.072	.197	.106	-.068	.215
	Sig.	.064	.007	.000	.000	.106	.000	.000	.028	.264	.002	.097	.291	.001
	N	244	245	245	244	244	244	244	237	244	242	244	244	247
snd3br	R	.281	.248	.343	.366	.179	.548	.562	.074	-.201	.044	.165	-.121	.283
	Sig.	.000	.000	.000	.000	.005	.000	.000	.258	.002	.505	.010	.062	.000
	N	241	242	242	241	241	241	241	232	239	237	239	239	242
snd4br	R	.152	.275	.456	.318	.070	.527	.425	.091	-.014	.152	.127	-.063	.276
	Sig.	.018	.000	.000	.000	.278	.000	.000	.163	.830	.018	.048	.328	.000
	N	244	245	245	244	244	244	244	235	242	240	242	242	245

		int1br	int2br	atd10br	atd11br	atd12br	snd1br	snd3br	snd4br	pbcd1br	pbcd2br	pbcd4br	snb1br	snb2br	snb3br	snb4br	pbcb1r	pbcb2r	pbcb3r	pbcb4r	pbcb5r	exp.
pbcd1br	R	.277	.239	.152	.111	.106	. 119	.281	.152	1	.273	.356	.117	.216	.184	.153	.094	-.152	.127	.138	.010	.104
	Sig.	.000	.000	.026	.098	.111	.064	.000	.018		.000	.000	.068	.001	.004	.017	.153	.018	.049	.032	.879	.105
	N	244	243	214	222	226	244	241	244	244	244	244	243	243	243	243	234	241	239	241	241	244
pbcd2br	R	.338	.336	.019	.045	.019	.172	.248	.275	.273	1	.474	.226	.109	.251	.089	.239	.055	.210	.190	.073	.190
	Sig.	.000	.000	.782	.502	.772	.007	.000	.000	.000		.000	.000	.089	.000	.165	.000	.395	.001	.003	.261	.003
	N	245	244	215	223	227	245	242	245	244	245	245	244	244	244	244	235	242	240	242	242	245
pbcd4br	R	.596	.625	.244	.207	.206	.353	.343	.456	.356	.474	1	.393	.221	.456	.302	.256	-.069	.339	.235	.057	.257
	Sig.	.000	.000	.000	.002	.002	.000	.000	.000	.000	.000		.000	.001	.000	.000	.000	.287	.000	.000	.381	.000
	N	245	244	215	223	227	245	242	245	244	245	245	244	244	244	244	235	242	240	242	242	245
snb1br	R	.417	.417	.281	.295	.260	.320	.366	.318	.117	.226	.393	1	.208	.381	.416	.149	-.034	.173	.170	.008	.124
	Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.068	.000	.000		.001	.000	.000	.023	.596	.007	.008	.898	.053
	N	244	244	214	222	226	244	241	244	243	244	244	244	243	243	243	234	241	240	241	241	244
snb2br	R	.177	.182	.111	.077	.048	.104	.179	.070	.216	.109	.221	.208	1	.108	.131	.059	-.172	.177	.333	.069	.039
	Sig.	.006	.004	.106	.252	.477	.106	.005	.278	.001	.089	.001	.001		.093	.041	.372	.007	.006	.000	.289	.543
	N	244	243	214	222	226	244	241	244	243	244	244	243	244	243	243	234	241	239	241	241	244
snb3br	R	.520	.550	.463	.504	.510	.495	.548	.527	.184	.251	.456	.381	.108	1	.623	.216	-.072	.228	.162	-.029	.227
	Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.004	.000	.000	.000	.093		.000	.001	.265	.000	.012	.658	.000
	N	244	243	214	222	226	244	241	244	243	244	244	243	243	244	243	234	241	239	241	241	244
snb4br	R	.374	.342	.437	.480	.460	.426	.562	.425	.153	.089	.302	.416	.131	.623	1	.236	-.129	.179	.235	-.037	.132
	Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.017	.165	.000	.000	.041	.000		.000	.045	.005	.000	.568	.039
	N	244	243	214	222	226	244	241	244	243	244	244	243	243	243	244	234	241	239	241	241	244

		int1br	int2br	atd10br	atd11br	atd12br	snd1br	snd3br	snd4br	pbcd1br	pbcd2br	pbcd4br	snb1br	snb2br	snb3br	snb4br	pbcb1r	pbcb2r	pbcb3r	pbcb4r	pbcb5r	exp.
pbcb1r	R	.175	.236	.122	.133	.152	.143	.074	.091	.094	.239	.256	.149	.059	.216	.236	1	.248	.280	.239	.221	.076
	Sig.	.007	.000	.081	.052	.026	.028	.258	.163	.153	.000	.000	.023	.372	.001	.000		.000	.000	.000	.000	.203
	N	235	234	205	213	217	237	232	235	234	235	235	234	234	234	234	279	279	278	279	276	279
pbcb2r	R	.045	.022	-.020	-.051	-.022	-.072	-.201	-.014	-.152	.055	-.069	-.034	-.172	-.072	-.129	.248	1	.054	-.064	.285	-.103
	Sig.	.489	.736	.769	.451	.739	.264	.002	.830	.018	.395	.287	.596	.007	.265	.045	.000		.361	.271	.000	.078
	N	242	241	212	220	224	244	239	242	241	242	242	241	241	241	241	279	296	293	296	293	296
pbcb3r	R	.243	.319	.095	.114	.171	.197	.044	.152	.127	.210	.339	.173	.177	.228	.179	.280	.054	1	.350	.101	.098
	Sig.	.000	.000	.168	.093	.011	.002	.505	.018	.049	.001	.000	.007	.006	.000	.005	.000	.361		.000	.086	.095
	N	240	240	210	218	222	242	237	240	239	240	240	240	239	239	239	278	293	294	293	291	294
pbcb4r	R	.163	.189	-.046	-.017	.009	.106	.165	.127	.138	.190	.235	.170	.333	.162	.235	.239	-.064	.350	1	.050	.062
	Sig.	.011	.003	.509	.807	.899	.097	.010	.048	.032	.003	.000	.008	.000	.012	.000	.000	.271	.000		.389	.285
	N	242	241	212	220	224	244	239	242	241	242	242	241	241	241	241	279	296	293	296	293	296
pbcb5r	R	.032	.046	-.012	-.013	-.024	-.068	-.121	-.063	.010	.073	.057	.008	.069	-.029	-.037	.221	.285	.101	.050	1	-.100
	Sig.	.620	.475	.861	.847	.719	.291	.062	.328	.879	.261	.381	.898	.289	.658	.568	.000	.000	.086	.389		.086
	N	242	241	213	221	225	244	239	242	241	242	242	241	241	241	241	276	293	291	293	294	294
exp.	R	.324	.374	.128	.174	.116	.215	.283	.276	.104	.190	.257	.124	.039	.227	.132	.076	-.103	.098	.062	-.100	1
	Sig.	.000	.000	.060	.009	.082	.001	.000	.000	.105	.003	.000	.053	.543	.000	.039	.203	.078	.095	.285	.086	
	N	245	244	215	223	227	247	242	245	244	245	245	244	244	244	244	279	296	294	296	294	301

Note: R = correlation, sig. = significance, N = number of cases, exp. = experience.

Eidesstattliche Erklärung

Ich erkläre: Ich habe die vorgelegte Dissertation selbständig, ohne unerlaubte fremde Hilfe und nur mit den Hilfen angefertigt, die ich in der Dissertation angegeben habe. Alle Textstellen, die wörtlich oder sinngemäß aus veröffentlichten Schriften entnommen sind, und alle Angaben, die auf mündlichen Auskünften beruhen, sind als solche kenntlich gemacht. Bei den von mir durchgeführten und in der Dissertation erwähnten Untersuchungen habe ich die Grundsätze guter wissenschaftlicher Praxis, wie sie in der „Satzung der Justus-Liebig-Universität Gießen zur Sicherung guter wissenschaftlicher Praxis“ niedergelegt sind, eingehalten.

Gießen, den 17.01.2017 _____