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BOWEN BASIN REGIONAL HOUSING DEMAND: IDENTIFYING COMMUNITY ASPIRATION

Milestone Report Five

Prepared for Department of Tourism, Regional Development and Industry (DTRDI)

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Abbreviations

ABS	*Australian Bureau of Statistics*
ACOSS	*Australian Council of Social Services*
AMCORD	*Australian Model Code for Residential Development*
BBRH	*Bowen Basin Regional Housing (model)*
CH	*Community Housing*
CSHA	*Commonwealth State Housing Agreement*
CQU	*Central Queensland University*
DIDO	*Drive in/Drive out*
DIP	*Department of Infrastructure and Planning*
DoC	*Department of Communities*
DoH	*Department of Housing*
DTRDI	*Department of Tourism, Regional Development and Industry*
EIS	*Environment Impact Statement*
EPA	*Environment Protection Authority*
FIFO	*Fly in/Fly out*
ISRD	*Institute for Sustainable Regional Development*
LGA	*Local Government Authority*
NGO	*Non-Government Organisation*
OESR	*Office of Economic and Statistical Research*
OSHS	*One Social Housing System*
PPP	*Public-private partnerships*
SAAP	*Supported Accommodation and Assistance Program*
SHA	*State Housing Authorities*
SPP	*State Planning Policy*
SPQ	*Single Person Quarters*
TAFE	*Technical and Further Education*
TBL	*Triple Bottom Line*

EXECUTIVE SUMMARY

The key focus of the work that is outlined in this report is identifying how different communities view housing needs and development options. A survey has been conducted in three communities (Moura, Biloela and Theodore) to assess future population and development trends of the relevant population groups. The case studies were assessed in the context of being potential service communities for the nearby Dawson coal mine.

The results of this study are notable in that they confirm the similarities rather than the differences between communities. Each community has a reasonably stable population with similar views about town development. Most people live in a house that they own, with 11.2% in a home provided by their employer and 10.6% in rental accommodation. The majority of respondents do not plan to move or upgrade their home in the next five years. There were some barriers to upgrading or purchasing homes, particularly cost for Moura and Biloela residents.

There were some differences between the communities. Residents of the small rural community (Theodore) were more likely to plan to stay in the longer term than residents in the regional hub (Biloela), while residents of the largely mining town (Moura) were even more likely to be mobile. Relative to the different towns, residents of Moura viewed the town as a safe place to live, but considered involvement with sport, stability and a country town aspect as negative factors. In contrast, Biloela residents saw their town strengths in terms of involvement with sport and convenient access, but viewed safety as a negative factor, while Theodore residents saw the country town aspect, friendly people and quality of life as positive aspects, and convenient access to other centres as a negative one.

There were differences in community responses when residents were asked where they would move if they bought a new home. The majority of respondents in the mining town (Moura) would not stay in the same town, while the majority of respondent in the country town (Theodore) would not move out of the town, and residents in the regional hub (Biloela) were split between staying and moving.

The results do confirm that housing issues are important, and that housing pressures exist in communities. A key point of difference between the towns is that the cost of housing is seen as a bigger barrier to development in Moura than in Biloela and Theodore. The choice experiments about town development confirmed that health services, workcamp development and provision of social housing are important issues, while the level of shopping and restaurants had little impact on preferences. Here the most notable outcome of the choice experiments is the degree of similarity between communities in terms of the responses. The respondents wanted improved health services, wanted an increase in social housing, and did not want to see further work camp development (instead of housing).

While there are some differences in attitudes between towns, it appears that there are stronger differences within the population groups than between towns. The short Schwartz survey instrument included in the questionnaire allowed four segmented community groups to be identified from the demographic data and the psychosocial variables.

When the high order psychosocial dimensions of the Schwartz values are used to cluster for universal differences, what looks like a singular group of older local residents from the demographic data can be better categorised into two groups, *Mature social locals* and *Older worker locals*. These two groups had quite different views towards mining development. These groups are generally stable and enjoy living in their respective towns.

The other two groups are less settled. For the *Single young females*, the opportunities for building a social set are not currently optimal in their towns. The *Young and mobile group*, at 29% of this sample of the three towns in the case study area, whilst being a substantial part of the regional economy, are not happy about the standards of education facilities and do not really like living in their town. This indicates that education and other services will need to be more attractive to maintain those groups. *Mature social locals* also may also move if health services are not improved.

The results of the survey provide some guidance for town development issues in the Bowen Basin. While each town has its own character and strengths, there is a very high level of consistency about attitudes to development options. Residents want better services, including medical, want better support mechanisms, such as housing for socially disadvantaged groups, and do not want excessive work camp development in their towns. The levels of retail and other commercial services do not appear to be so important, perhaps reflecting the mobility of people and access to larger centres.

The results also provide some indication of where towns and communities may be different. Residents in the mining town appear to be more mobile than the other communities, while residents of the country town are much less likely to relocate in the future. This suggests that mining towns are more likely to experience population fluctuations over longer time periods (both positive and negative). However, the larger differences were not so much between communities but across social groups. While older people were more likely to be settled, single and younger people are much more likely to only stay for a limited period of time in their communities. This suggests that smaller centres, whether mining or rural, will struggle to hold population in the longer term. A key focus of development for these towns should be to maintain the attractiveness of these communities for younger and single people.

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SECTION ONE: INTRODUCTION

The recent commodity boom and subsequent mining developments in the Bowen Basin has generated a number of housing pressures in the region, a situation that not only affects individuals and families but also has negative flow on effects for the local and regional economy. Higher prices and shortages of housing can impact on people with lower incomes, generating social pressures, as well as limiting the potential for further economic development and diversification. Addressing housing shortages is a key strategy to ensure that rapid development does not cause adverse social and economic impacts on regional communities, as well as to ensure that there are strong local and regional multiplier effects in the regional economies. However, before housing strategies can be developed, appropriate levels of prediction and planning need to be undertaken.

The economic challenge for regional development in mining areas is to optimise the advantages of the booming resource industry, minimise any offsetting costs of impacts and to secure future development of the region. There are many options for the development of towns such as Moura (such as to choose between building more work camps or permanent houses) but there is limited knowledge about how to prioritise the development choices. Factors that are likely to influence the desirability of different development options include the costs involved, the wishes of the relevant community, predictions about demographic, economic and social trends, and the strategic planning and development priorities of the local and state governments.

Understanding what the community wants and how the community might prioritise different options is an important factor in helping to direct development in a town and region. This is because developments that meet with community approval are more likely to be accepted by residents, to generate subsequent multiplier effects, and to build social capital. The key focus of the work that is outlined in this report is identifying how different communities view housing needs and development options, where some in-depth information about community needs and trends are assessed in different ways. The analysis is presented in a case study format, where the housing demand predictions for three towns (Moura, Biloela and Theodore) are assessed in the context of being potential service communities for the nearby Dawson coal mine.

The benefits of focusing on a single case study (Dawson Mine) in a relatively stable area is that the mine is close to three different types of towns, allowing some identification of how mining and town development are viewed across communities. The closest town to the mine is Moura, a traditional mining town in the Basin. Theodore is a small mixed farming town that is increasing its exposure to the mining industry, while Biloela is a diversified regional hub servicing mining and agriculture industries among other interests.

To assess the housing needs and preferences of people in the different communities, a survey was performed of a sample of households in each town. The majority of the respondents contacted lived in the towns, with some on rural properties surrounding Theodore. A total of 318 surveys were collected in June and July 2008. The survey instrument involved several sections, including general questions about housing and location preferences, and more specific tradeoffs about town development options employing Choice Modelling and Choice Behaviour

survey techniques. These allow for more quantitative assessment of the patterns of responses across the three communities. After the surveys were collected, the data was coded and analysed to identify patterns in the responses from the survey.

This report is structured in the following way. In the next section, a short summary of the population projections and housing demand analysis provided by the BBHM is presented for the three towns of interest. This is followed by an analysis of the preferences, needs and current activities of mining workers at the Dawson mine identified from the survey results, helping to inform more precisely the future trends in demands in housing type and location from this group. In the final sections of the report, analysis is provided about these issues on policy mechanisms.

SECTION TWO: DESIGN AND PERFORMANCE OF SURVEYS

The Choice Modelling survey involved asking town residents if some improved town development options were attractive enough for them to be prepared to incur higher costs to achieve them. Respondents were also asked in a similar set of tradeoffs if they would change the number of years they planned to stay in their town when different town development options were presented. These contingent behavior questions were designed to supplement the choice modeling questions and help identify the importance of key attributes.

The research reported in this paper is noteworthy in two key aspects. First, it represents the application of a stated preference technique to questions about resource allocations to community development, rather than for environmental or other resource allocation issues. Second, it involves an exploratory attempt to trial and compare contingent behaviour responses with choice modelling responses. The application is possible in this case study because it is plausible to offer respondents options that have either price or behavioural implications.

A key stage in developing a Choice Modelling experiment is to identify the key attributes of interest and the frame in which they will be presented to survey participants. This task was performed in two main ways in this project. First, a desktop audit was undertaken about key mining impacts and development issues for the Moura, Biloela and Theodore community. Second, personal interviews were conducted with key stakeholders in the respective communities in a qualitative framework. The information that was gained helped both to identify the key issues of interest, and how they could be presented in a survey format.

Among the key challenges in a Choice Modelling experiment is to identify attributes and levels that are relevant to potential participants, frame them in a way that is appropriate, and keep the choice task interesting but relatively simple. The survey needed to be broad enough to cater for key issues that might be important to different communities, and specific enough to provide useful feedback. The survey had to be simple and concise so that it was easy for respondents to complete, but still be capable of providing useful information.

A key challenge was to identify the participants and achieve suitable response rates. In this study, potential respondents were contacted by members of local community organisations and were asked to complete the survey on community development options. The survey comprised of two parts: general questions and the Choice Modelling part.

The first part of the survey focused on questions related to
- Residency and housing history of participants,
- perceptions of the community they live in,
- future housing preferences,
- views about current coal mining development,
- attitudes towards current high housing demands,
- factors that have caused stress in household, and
- socio-demographic characteristics of respondents.

The second part of the survey focused on presentation of the Choice Modelling questions. Three Choice Modelling options were offered to respondents in four different versions of the survey. There were also some follow up questions after the choice sets to explore reasons why different patterns of choice had been followed.

2.1 Design of the Choice Modelling profiles

Choice Modelling involves asking respondents to a survey to make a series of choices about alternative scenarios or profiles. In this study each choice set involved three profiles describing the alternatives on offer. One of the profiles described the expected development outcome in five years time, and remained constant between the choice sets. The other profiles varied, so that respondents were being asked to make a series of similar, but different choices. An example of a choice set used in this experiment is given in Figure 2.1.

The profiles were made up of five attributes that describe the issue in question. These attributes were selected from stakeholder analysis interviews as the key factors of relevance to the development of the Bowen Basin communities. The key attributes included in the choice sets (Table 2.1) were:
- Additional annual costs to the household.
- Low cost accommodation – extra amount of housing available for people on low incomes
- Level of health services – number of private GP and health services
- Level of shopping and restaurants - number and size of stores and restaurants
- Level of work camps in town – the proportion of the new workforce located in a work camp

To generate differences between profiles, these attributes were allowed to vary across different levels (e.g. $0, $100, $200 and $500 in Additional annual costs to the household). The profiles that can be generated from the five attributes and the different levels then represent different options for respondents to consider. Two profiles were presented per page for respondents to consider, with each respondent completing four choice sets. An experimental design was used to select the profiles that were offered.

Table 2.1 Attributes and levels for the choice sets.

Attributes	Levels
Additional annual costs to the household	$0 (base) , $100, $200, $500
Low cost accommodation	20% (base), 50%, 100%
Level of health services	• No change in number of private GP and health services(base) • Private GPs/Doctors plus allied health services doubles in numbers • Private GPs/Doctors and allied services doubles in numbers, plus childcare services
Level of shopping and restaurants	20% (base), 50%, 100%
Level of work camps in town	20% (base), 50%, 100%

It was explained to respondents that development options might come with additional costs, explained in the following way:

> *Each option involves a tradeoff, where we show that positive development outcomes might involve some costs to town residents. We have summarised this as a **reduction in your disposable income**, which might occur because of a mixture of:*
> - *extra support for local businesses and services although local prices are higher*
> - *increased charges by state and local government to provide better services,*
> - *reduced wages from coal mining companies so they can minimise impacts from new developments*
>
> *There are **no current plans** for any of these extra charges – we are simply trying to find out if residents think it is worth developing the town in specific ways.*

For each Choice Modelling scenario, respondents were also asked to state how many years they would stay in town if town developed as it was described. These questions about behaviour (Choice Behaviour) could then be contrasted to the responses where the focus was on the trade off between cost and the other attributes (Choice Modelling).

Figure 2.1 Sample Choice Set

Q24. Please indicate your preference between development option 1 and development option 2 in the box below.

Option 1	Option 2
• *Low-cost accommodation **grows by 20%***	• *Low-cost accommodation **grows by 20%***
• *Private GPs/Doctors and allied services **doubles** in numbers, **plus childcare services***	• *Private GPs/Doctors and allied health services **doubles** in numbers*
• *Major stores and restaurants **increase by 20%***	• *Major stores and restaurants **increase by 100%***
• ***20%** of new workforce is located in work camps*	• ***50%** of new workforce is located in work camps*
• *You have to spend an extra **$200/year ($17/month)** of your disposable income*	• *You have to spend an extra **$100/year ($8/month)** of your disposable income*
If this town developed like this in 5 years time how many years would you stay from now?	*If this town developed like this in 5 years time how many years would you stay from now?*
Less than 1 year *1*	*Less than 1 year* *1*
1 - 2 years *2*	*1 - 2 years* *2*
2 - 3 years *3*	*2 - 3 years* *3*
3 - 4 years *4*	*3 - 4 years* *4*
4 - 5 years *5*	*4 - 5 years* *5*
6 - 10 years *6*	*6 - 10 years* *6*
10 - 15 years *7*	*10 - 15 years* *7*
Rest of my life *9*	*Rest of my life* *9*
Uncertain *10*	*Uncertain* *10*

Please indicate your preference:
(Tick one)

☐   **Option 1**

☐   **Option 2**

☐   **Option 3** (I would not support either option)

☐   **Option 4** (Unsure)

A key stage in the application of the Choice Modelling exercise is to explain to respondents what the purpose of the exercise is and how it will be presented. To achieve this, the following information was provided to respondents (Figure 2.2).

Figure 2.2 Information provided to respondents

In the next few questions, we ask you about some options for the future development of your town. In each question, we are going to give you two options for how the town could develop in the future, where each option is described in different, but similar ways.

We've identified some of the most important issues from talking to a range of people in the community. To keep the questions simpler, we've focused on four key issues in the options below.

- Low cost accommodation – amount of housing available for people on low incomes
- Level of health services – number of private GP and health services
- Level of shopping and restaurants - number and size of stores and restaurants
- Level of work camps in town – the proportion of the new workforce located in a work camp

SECTION THREE: PERFORMANCE AND RESULTS

The data collection was undertaken by three teams of five volunteers from local Rotary clubs. Each President of the Rotary branch was briefed by an ISRD researcher prior to data collection as they also took on the role of supervising the rest of each field team. The three teams were instructed to select alternating streets within their community and each volunteer proceeded to contact every second household directly by knocking on their door. If contact was made and the respondent agreed to participate a questionnaire was left with the respondent and a time to collect the completed survey was arranged. The field team had to allow for the diverse lifestyles of the respondents and worked at different times during the day as well as covered weekends to accommodate respondents' availability. The field work period was 21 days.

The survey instrument was a 16 page paper questionnaire consisting of 53 closed and 7 open-ended questions (see appendix 1 for survey instrument). The survey instrument came in 4 versions due to the choice based modelling component at Q24, Q25 and Q26, with all other questions identical across the versions. Each version was equally distributed amongst the three teams to ensure non-bias in the sample.   It took around 30 to 45 minutes to complete the survey with the focus on key issues in local communities such as historical and demographic data, housing options, perception on local community and mining development impacts.

The survey results are presented in summary form[1], covering the following sections:

- Demographics
- Employment & travel commitments
- Community perception
- Current & future housing options

3.1 Demographics of Moura, Biloela and Theodore communities

In total the majority of the community survey respondents were females (57%) followed by males (43%). When looking at each individual town however, Biloela had more male (55%) than female respondents (45%). The average age was around 46 years (SD=14.7), concentrating around the ages of 34 and 56 (25-75percentile). Almost 78 percent of all asked were either married or in a de facto relationship and 22 percent indicated that they were of single status. More than half of the residents asked had no children living with them (64.4%). Of those that live with children an average of 2 children per household was recorded.

With the majority of all households made up of two adults (65.2%), overall most households earn between $100,000 and $150,000 p.a. (29.8%) with Moura taking the largest proportion of this group, followed by $70,000 to $100,000 (20.2%). Looking at the historical data of the sample, across all three towns more than half of the respondents have lived in their community for more than 15 years (55.3%) strongly corresponding to the question where they grew up, with most coming from small towns (37.3%) and rural settings (37%). It is therefore perhaps worthwhile mentioning that about 26 percent of the people asked felt uncertain about their future in their communities, thus suggesting instability amongst communities in the Bowen Basin.

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[1] Note on all graphs and tables: The graphs are based on number of remaining valid cases exclusive of missing values. The tables listed in the appendix are based on actual percentages inclusive of missing values.

Figure 3.1 Household income by town
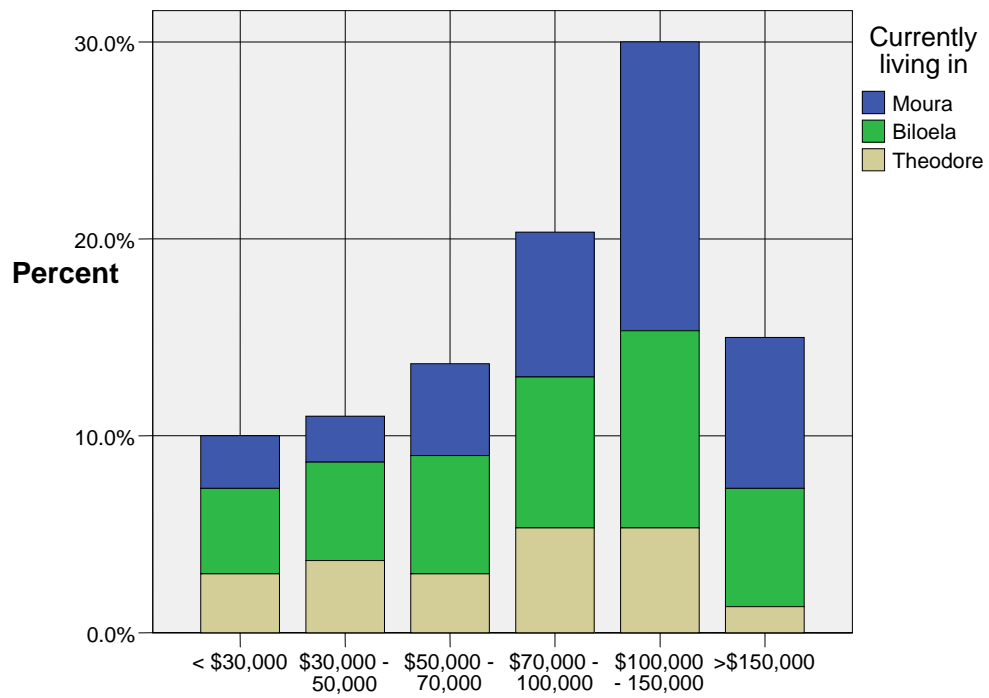
Figure 3.2 Number of adults in household
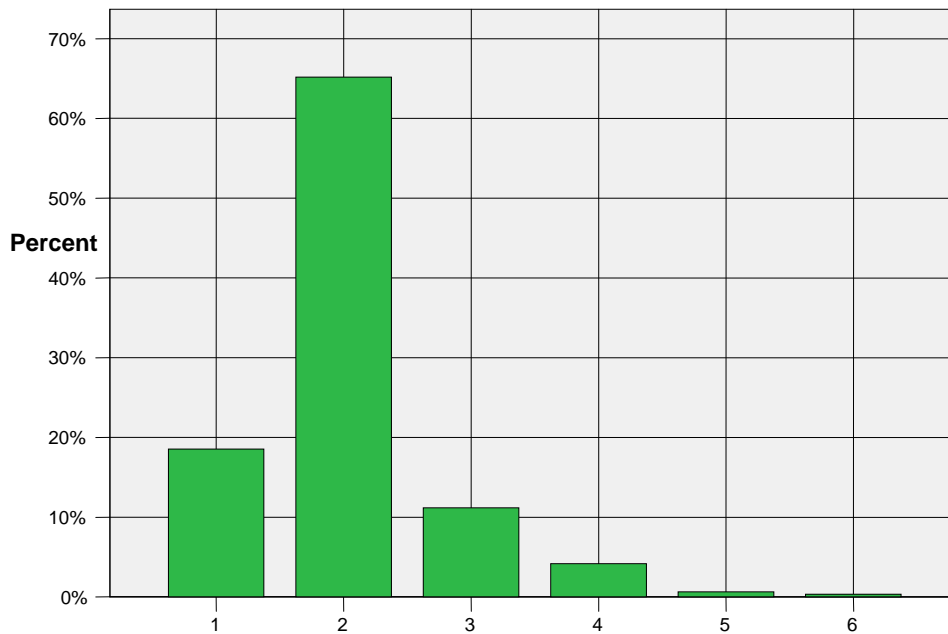
Figure 3.3 Location of childhood years by town
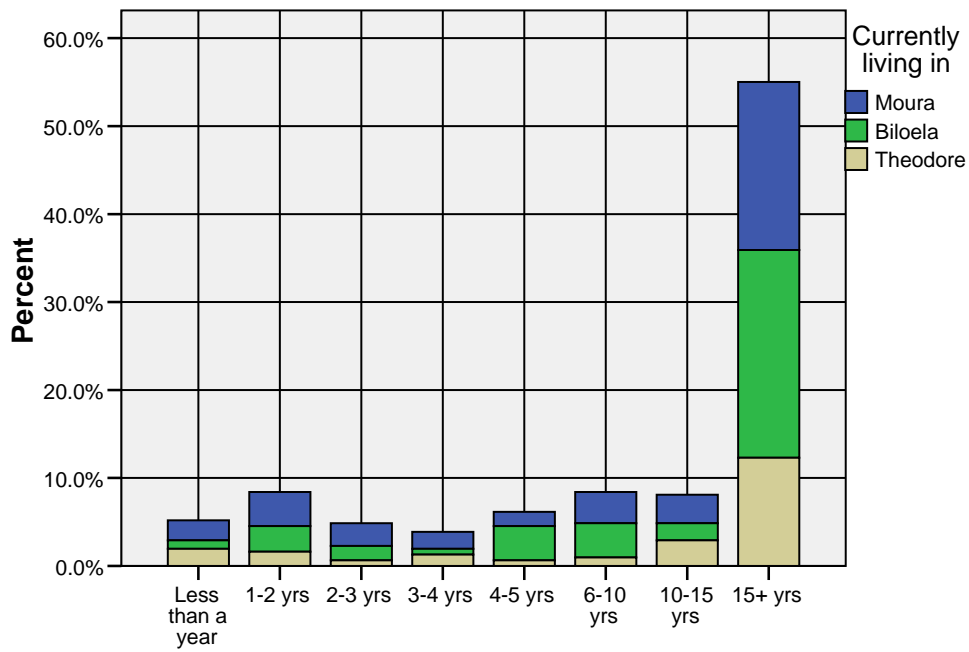
Figure 3.4 Years lived in this town by town
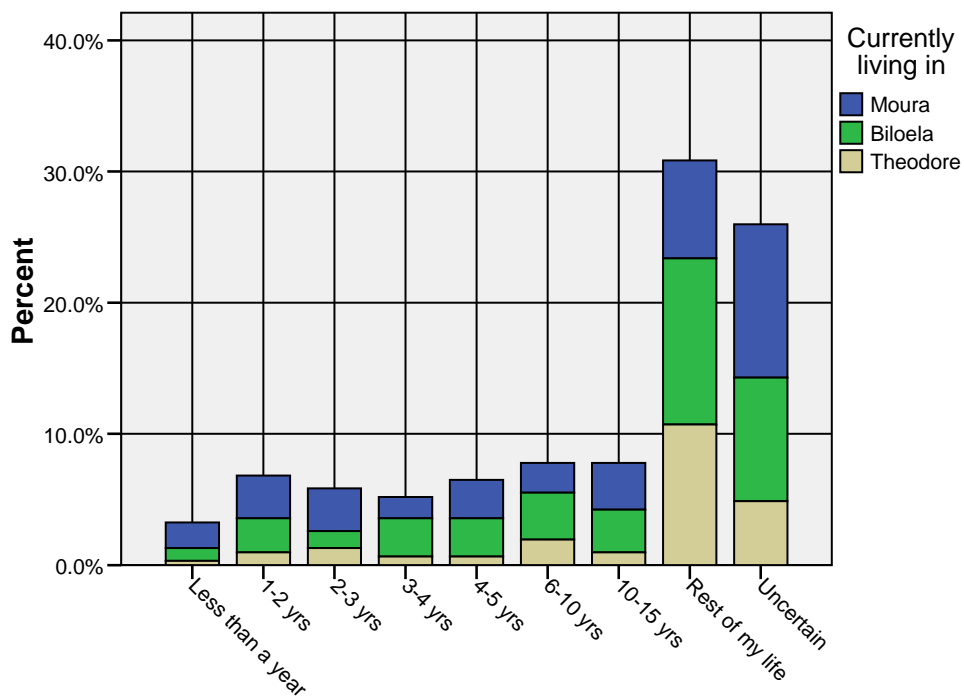
Figure 3.5 Continue to live here by town
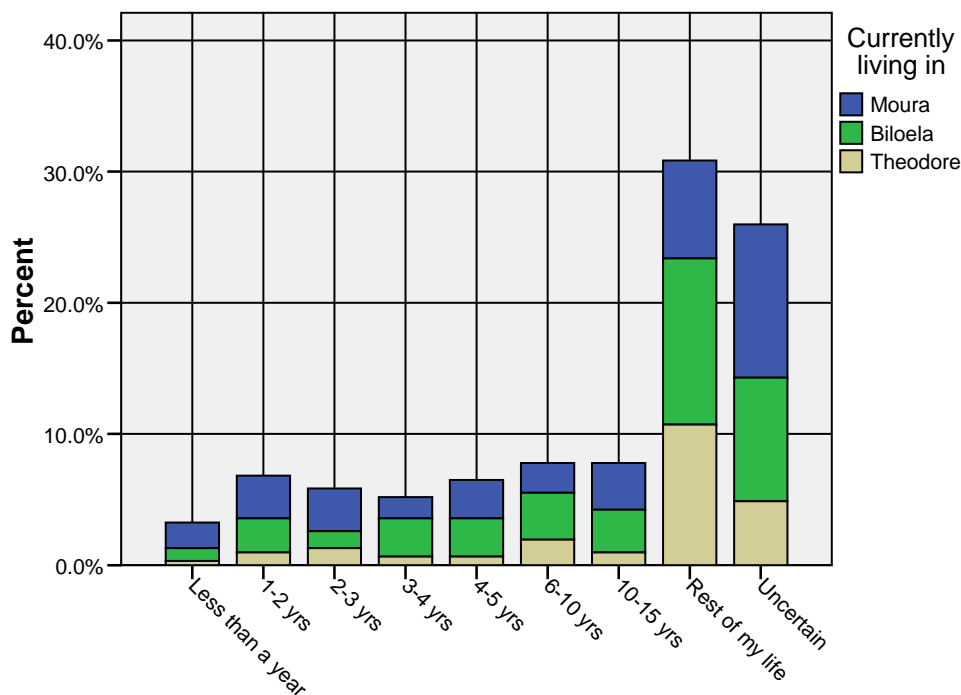
3.2 Employment Profile

All respondents were asked about their employment details and those of their partners and other members of the household if it applied. For convenience the list of industry sectors has been grouped into 6 categories. The data indicates that about a third of the respondents work in Tertiary and Services across all three communities. Compared to Biloela and Theodore, Moura had the highest percentage of Mining and Mining related industries employed persons (30.3%). The residents of the three towns were further asked about their occupation and that of their partners. Overall most of the respondents work as a Salesperson or personal service worker (15.4%) and their partners as Plant/Machinery workers (18.9%). The survey asked about the time it took to get to work for the person filling out the survey and their partner. Over half (56%) of the surveyed travel less than five minutes to work and so do their partners at around 41 percent though, followed by 31.5 percent of the partners taking up to 15 minutes.

Figure 3.6 Employed by industry sector[2]

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[2] The percentages in this graph are based on 100% for each town rather than Grand total in order to emphasis Moura's involvement in the mining industry compared to the other two towns.
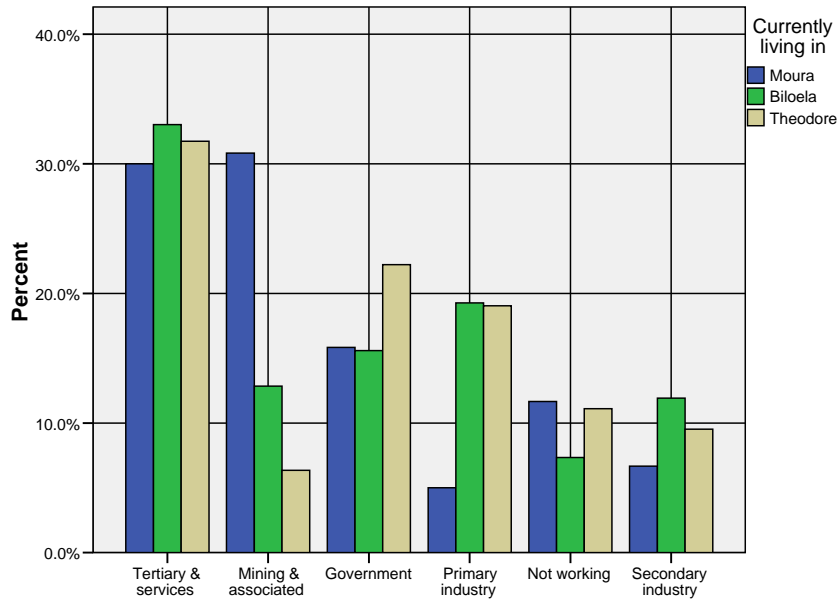
Figure 3.7 Work travel time
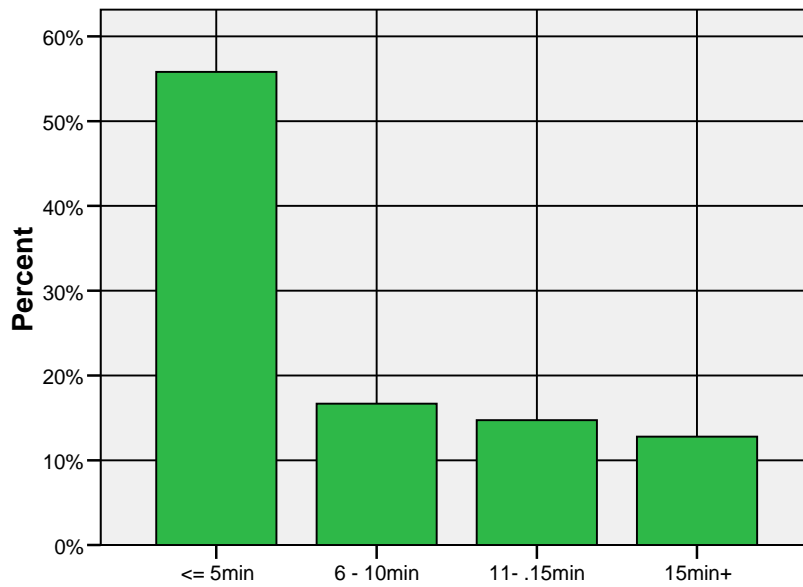
Figure 3.8 Partner travel time to work
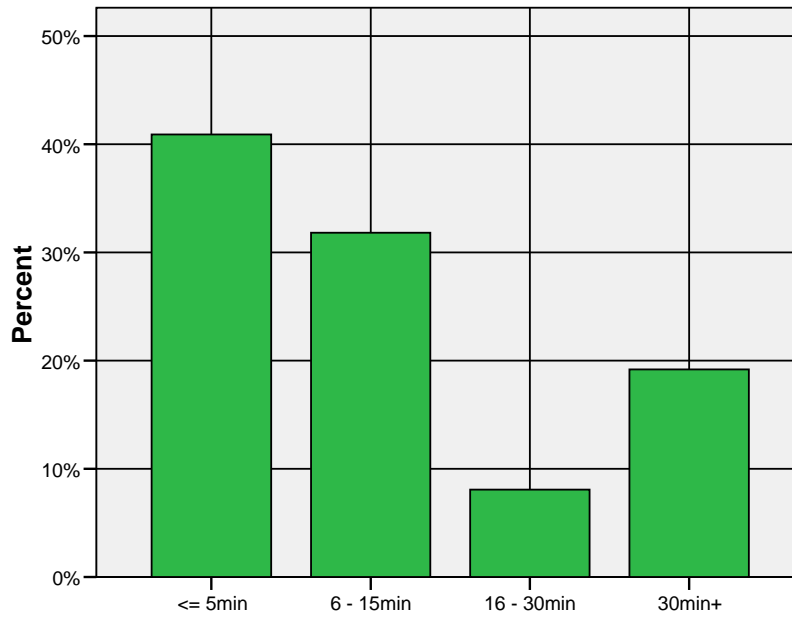
It was further investigated if people in their household work on continuous shift. Almost 21 percent of the respondents in Moura did work on shift as opposed to Biloela with 32.4 percent (figure 3.9) not working on shift. Of those that did work on shift the majority had only one person in the household on shift (81.7%). Almost 91% of those that worked on shift work spent their time in their town when not working (figure 3.10).

Figure 3.9 Adults employed in continuous shift work
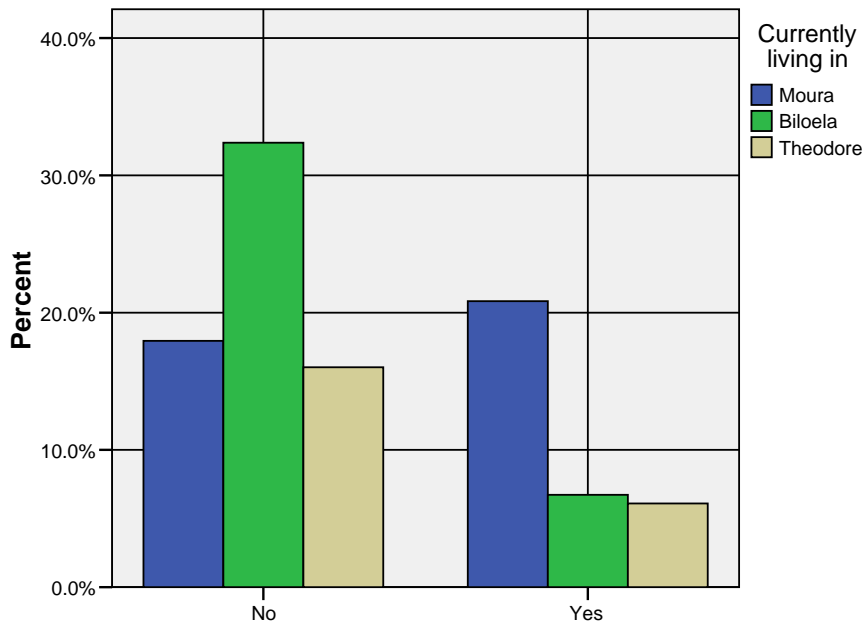
Figure 3.10 Time spent when off shift work
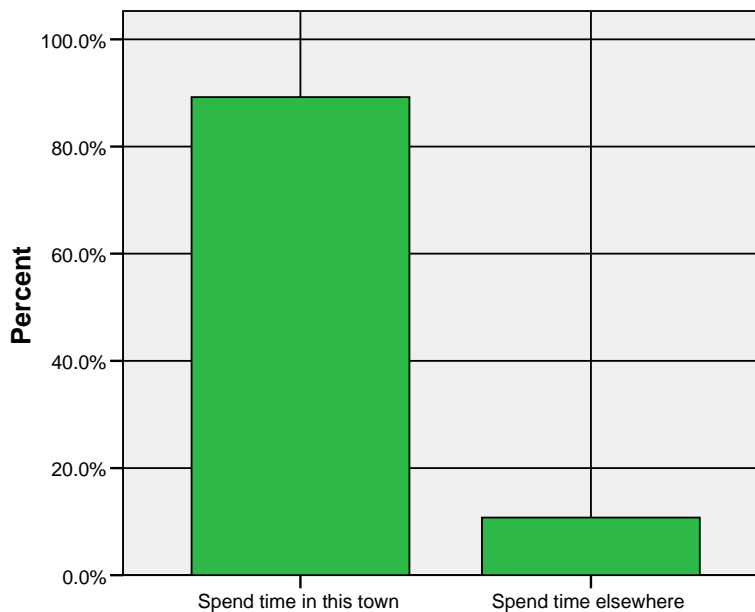
3.3 Community Perception

A key part to the survey was a set of questions to ascertain the respondent's perception towards the community they lived in. Respondents rated their town on a number of factors on a scale of one to five, where one stood for "Not at all agree" and five stood for "Very much agree". The following three graphs demonstrate the relative match for each statement in order of strength as well as the significance of difference to the other towns. A variable that scores higher than two in either direction suggests a significant difference in agreement between the towns. The negative scale would indicate a lower rating compared to the other two towns in this case. The data indicates that respondents from Moura compared to Biloela and Theodore agreed less to all factors and in particular to the town's involvement with sport, its quality of life and stability.

However, it seems that Moura's respondents agreed more that it was a safe place to live as opposed to Biloela and Theodore.

Figure 3.11 Perceptions of community in Moura
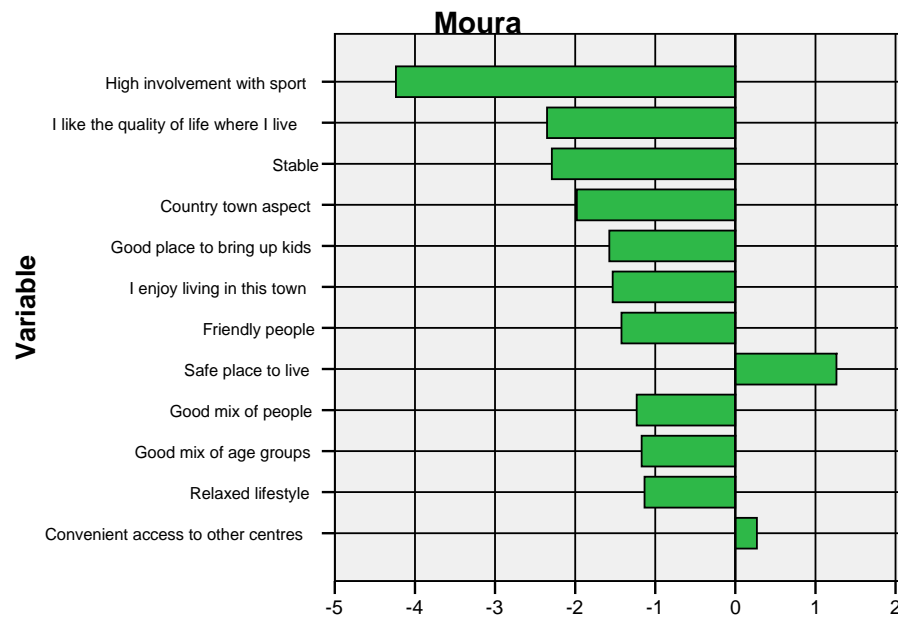
Data from Biloela seems to suggest that their town is highly involved in sport and that access to other centres is easier compared to the other two towns.

Figure 3.12 Perception of community in Biloela

Biloela
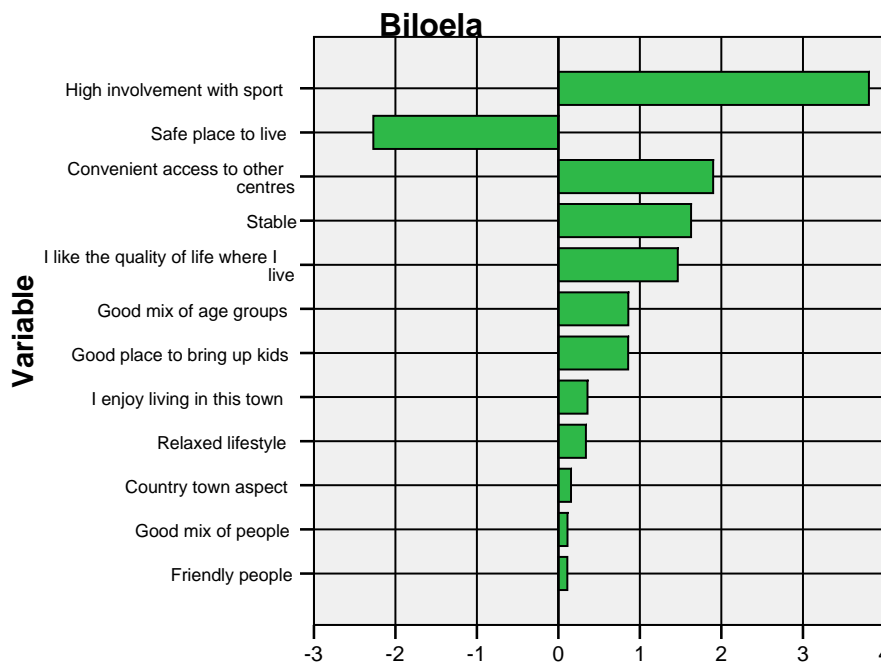
Theodore's data to their community perception suggests that they may have a more positive view of their town due to an overall higher agreement on all statements.

Figure 3.13 Perception of community in Theodore

Theodore

3.4 Current and future housing options

Residents of Moura, Biloela and Theodore were asked a set of questions on their current home, choice of type of home and location, potential barriers to upgrade their home as well as reasons that would be important to them if they were to move to another location.

Overall almost 94 percent stated that they lived in a house they own (69%) with more than half of those comprising of 3 bedrooms (59.3%), one bathroom (67%), and between one (43%) and two (42.7%) car spaces. The data further indicated that 83.6 percent had no swimming pool. Of those

who do not own their home, they stated that they had their home provided by their employer (11.2%) or rented on the open market (10.6%). The survey further asked about whether any upgrading to the home in the next five years would be undertaken. Across all three towns, most stated that they had no such plans (70%) . Of those who stated that they would move, only 14 percent would plan to buy and almost 16 percent had plans to renovate.

 It was further investigated where the respondent would move to if they were to buy a new home. The majority of respondents in Moura would not stay in Moura but would move somewhere else (31.4%) , Biloela had an almost equal split between staying in their town (20.1%) and moving to another location (19.1%) and most of those in Theodore would buy in the same town. If the respondent selected "other location" they had to specify where. After post-coding the "other" responses, data suggests that more than half of the people surveyed would stay in Central Queensland (62%) followed by those that would choose to live somewhere along the Queensland coast (15.5%) (Figure 3.15).

Figure 3.14 Where would the new home be
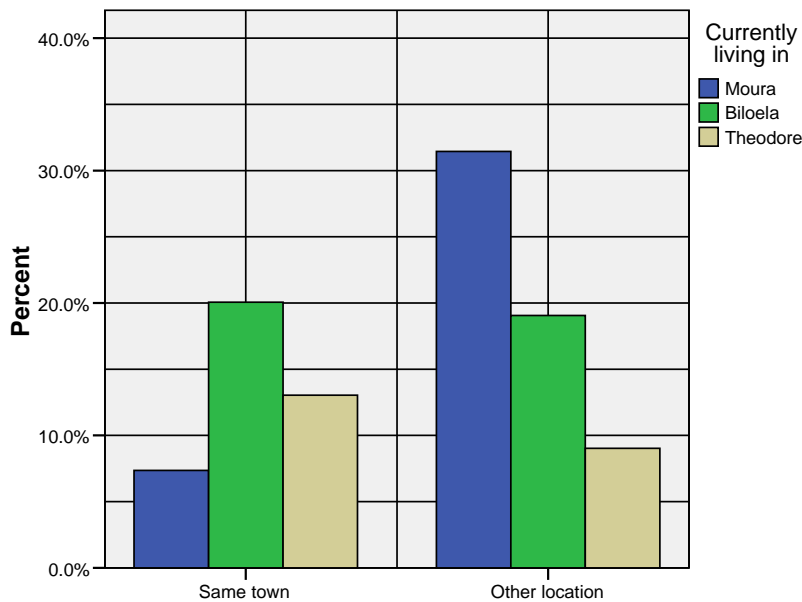
Figure 3.15 Where would the new home be
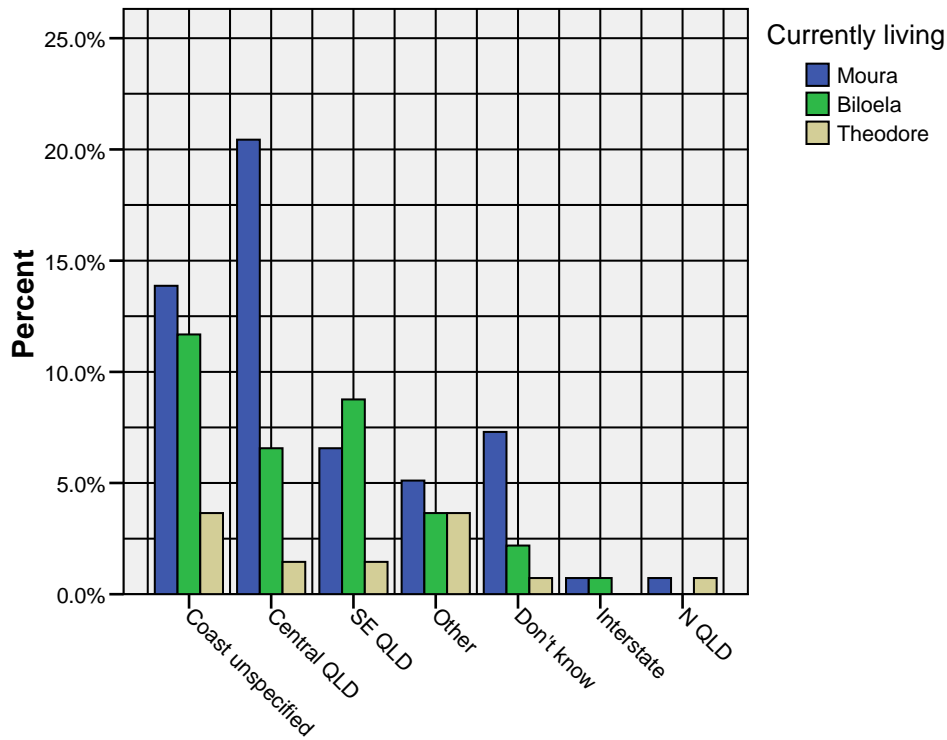
One of the questions asked about the key items that respondents would look for in a new home. In total 14 percent of the sample were looking for better quality houses and houses that were more energy efficient, followed by eleven percent being closer to services as another key item.

Figure 3.16 Key items in a new home
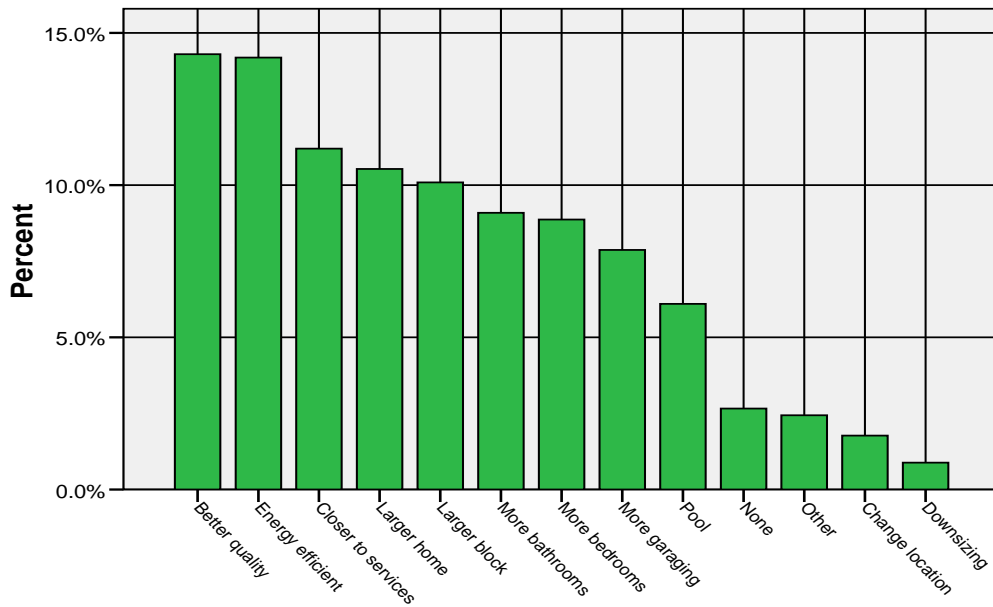
It was further investigated whether respondents perceived any barriers to upgrading to a new home. The data shows that overall almost half do not think there are barriers and the other half do. When cross-tabulated by town, there was an equal split in Moura. The majority of Biloela's respondents indicated that there are no barriers to upgrading as opposed to Theodore where the majority of respondents suggest that there are barriers (see figure 3.17).

Figure 3.17 Barriers to upgrading to a new home
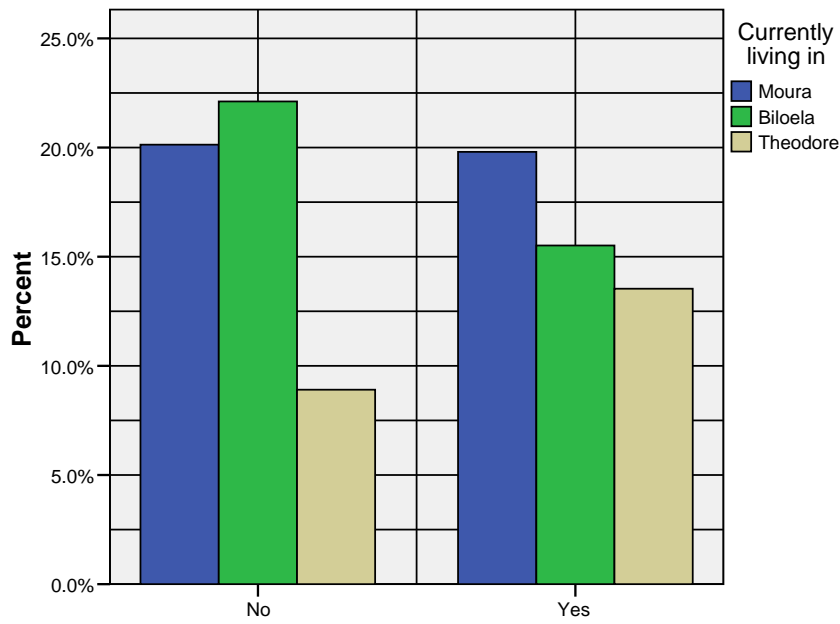
The survey identified the following barriers to upgrading a home: Almost half of the people who thought that there were barriers, pointed to the fact that houses are too expensive (45.4%) followed by the difficulty in finding builders. Moura and Theodore residents ranked the lack of tradesmen equally high as a barrier whereas respondents from Biloela indicated the high house prices to be the main barrier.

Figure 3.18 Barriers to new houses
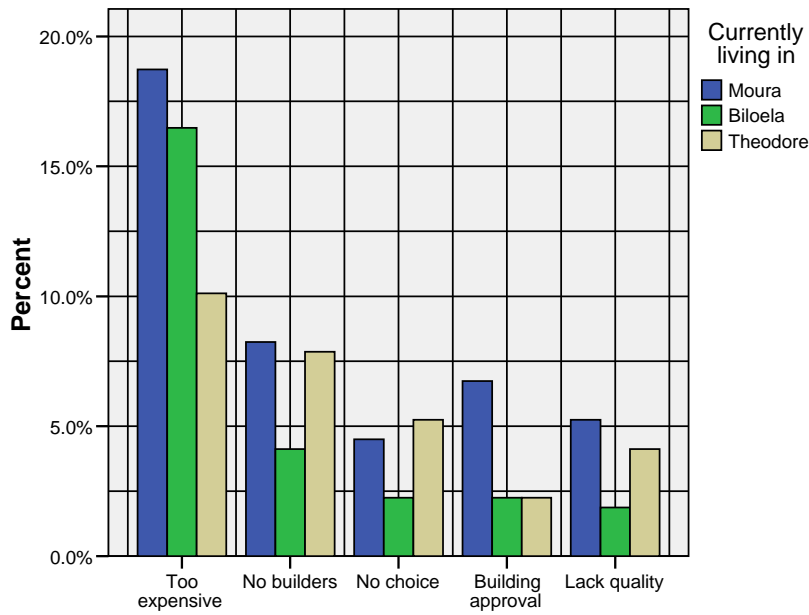
Respondents were also asked if they had moved within this town. The data shows that respondents in Biloela and Moura moved slightly more compared residents in Theodore. Upgrading to a better home was the main reason for Biloela residents to move (14.9%) and finding an attractive home the most given reason for Moura residents (11.1%). Residents of both towns also indicated the financial incentives, while it was one of the lesser reasons for Theodore residents to move (figure 3.21).

Figure 3.19 Moved within town
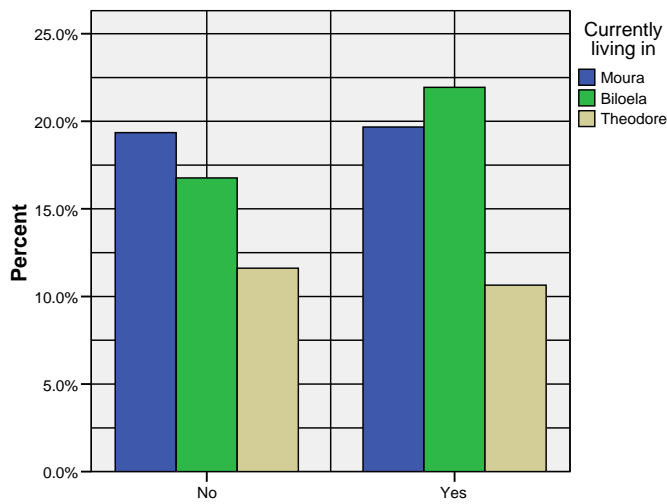
Figure 3.20 Number of times moved within the town
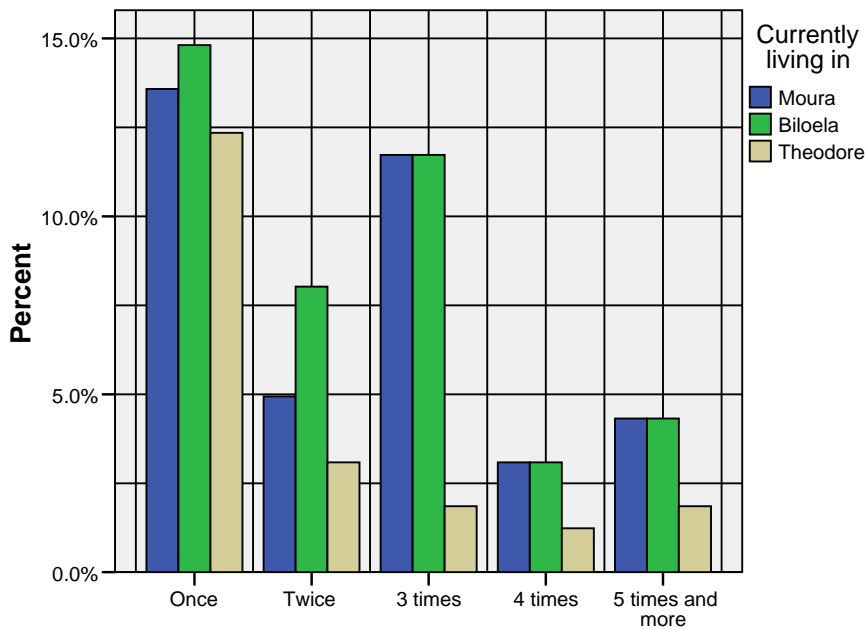
Figure 3.21 Reasons for moving
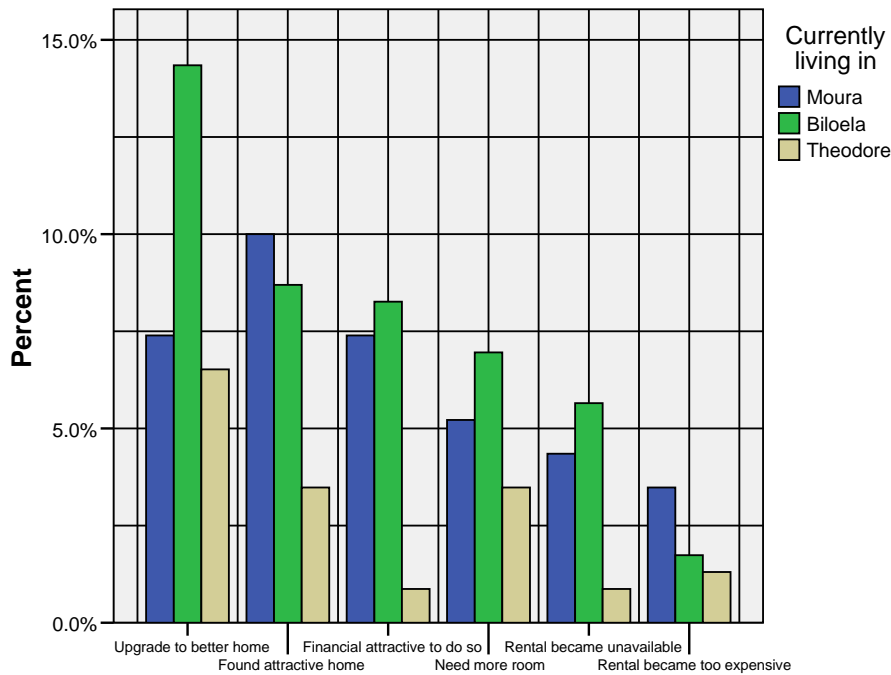
Looking at previous places of residence, SE-Queensland (27.6%) and Central Queensland (26.6%) were most mentioned, followed by the Bowen Basin region (20.5%) also about eleven percent stated that they had not lived in another place. It also indicated that most had only moved once before moving to their current community (figure 3.23). When comparing the quality of housing to those previous towns with their current town it has been marginally worse compared to their current setting (37.3%) though cross-tabulation by town suggests that both Theodore and Moura stated that their homes were more or less the same and those living in Biloela lived in worse housing before they moved to Biloela (figure 3.24).

Figure 3.22 Last town lived in – 1st mentioned
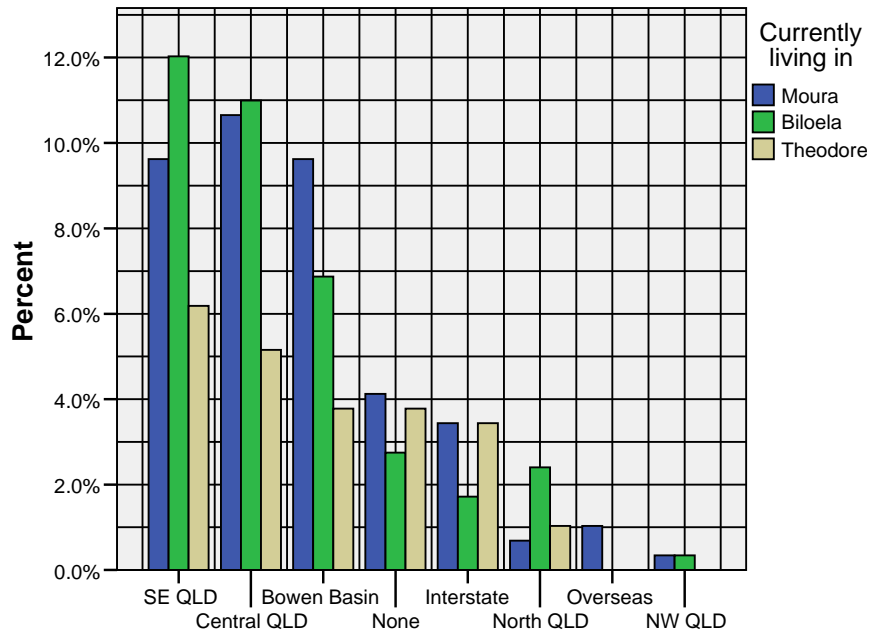
Figure 3.23 Last town lived in 2nd mentioned
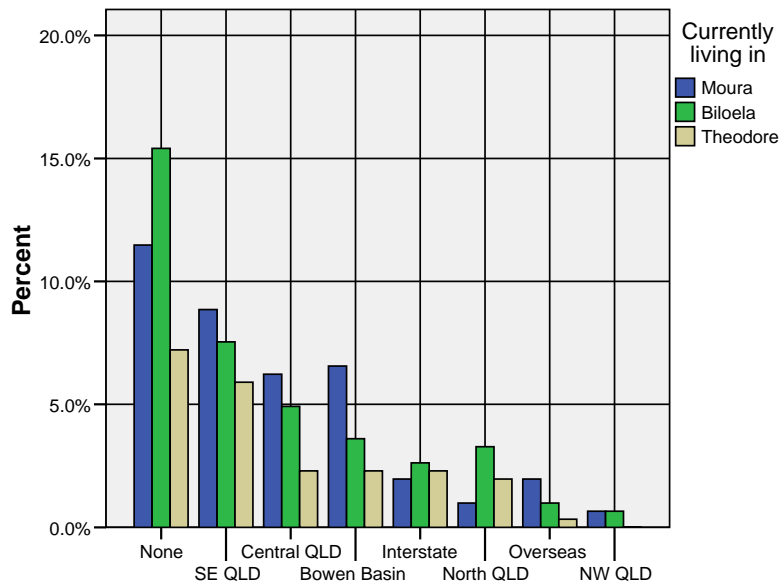
Figure 3.24 Quality of home in previous town
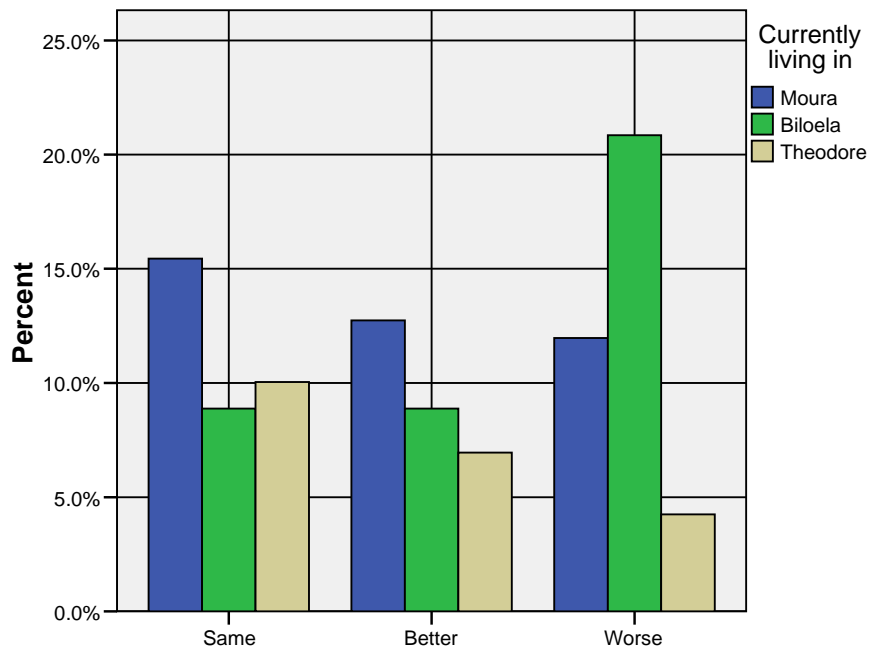
One third of the total asked have another home for investment or lifestyle purposes elsewhere (47.7%) and 21% somewhere on the Central Queensland coast.

Figure 3.25 Location of other home
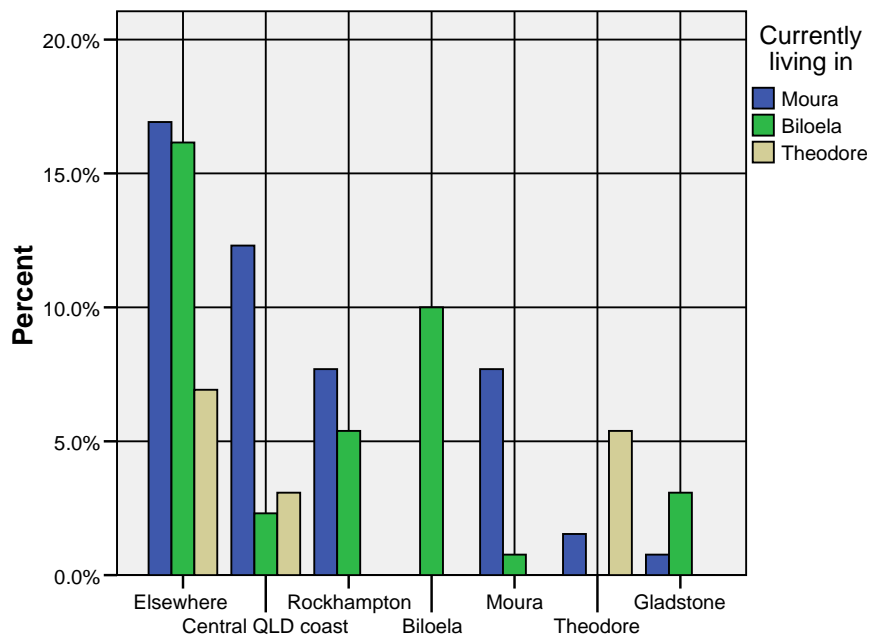
Another question was trying to focus on what would be important when deciding on a location to live. For the sake of comparison the mean on all attributes was calculated to compare the three towns. Biloela rated "Education Services" significantly less (mean=3.11) than Theodore (mean=3.54), health services was the most important to residence in Moura and better shopping more important to Moura than Theodore. All three towns rated the different mix of people/social set the lowest at around 2.65. Section four covering the segmentation will describe a more detailed picture on this question.

Figure 3.26 Importance of reasons to live somewhere else
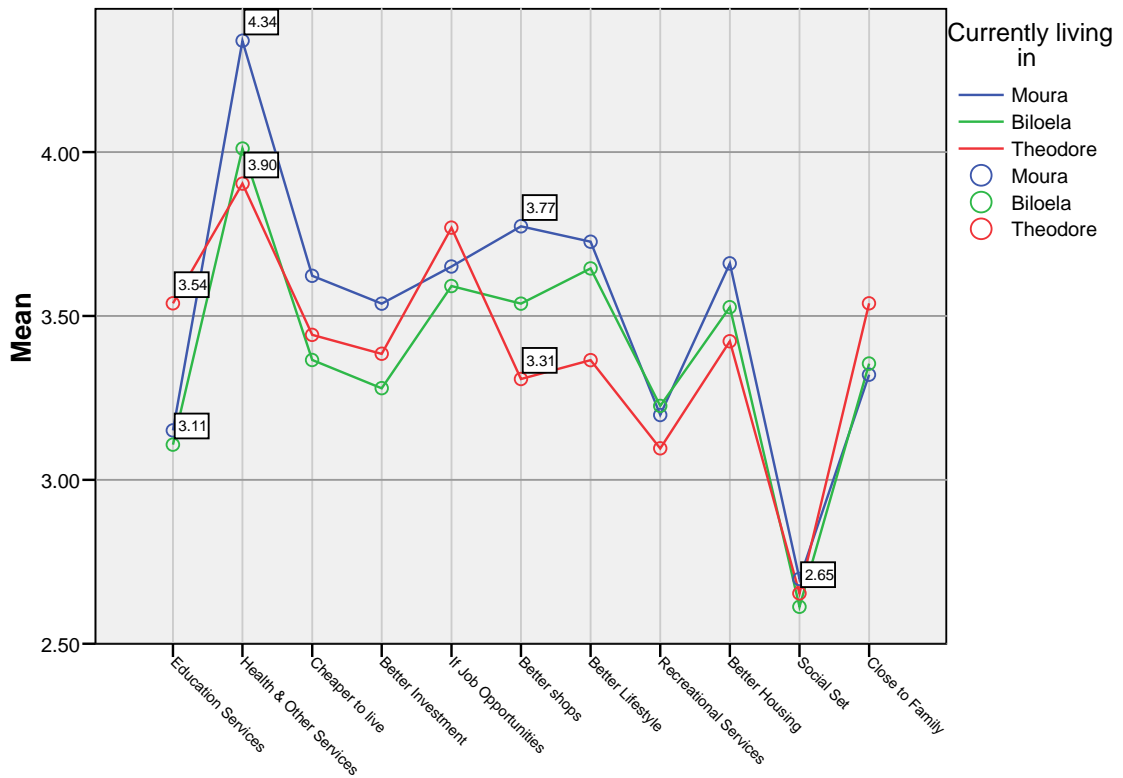
When faced with the question whether to continue with the current job but move elsewhere 80 percent said that they would not be prepared to do so. Of the 20 percent that would consider moving most would prefer to live somewhere along the Central Queensland coast (28%) or somewhere in South East Queensland (21%).

Figure 3.27 Prepared to move somewhere else
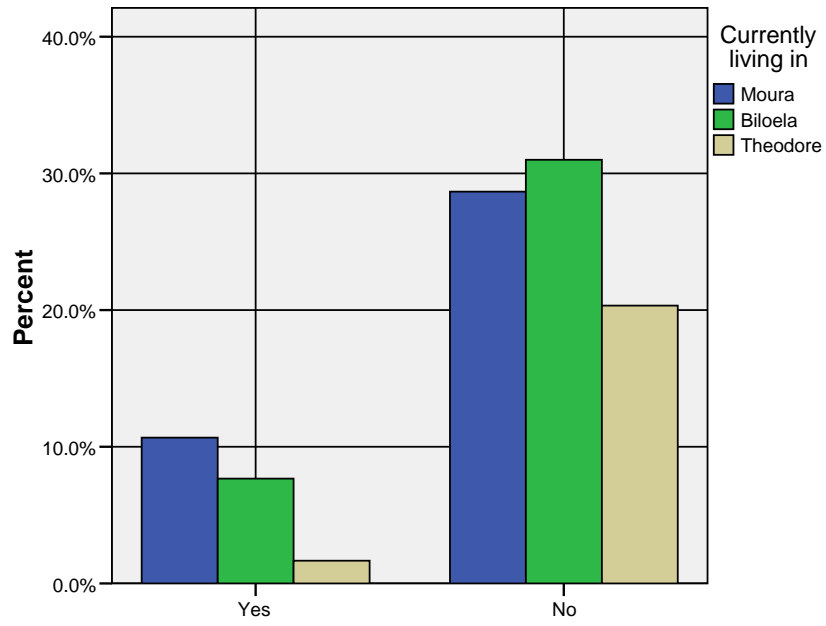
SECTION FOUR: RESULTS OF THE CHOICE MODELLING EXPERIMENT

In the Choice Modelling experiment, participants were given three similar tradeoffs relating to their potential choices in town development, and asked to indicate their preferred choice in each. The number of choices made by respondents are summarised in the following figure. The dominant preference of respondents (66%) was for options 1 and 2, implying they preferred to have some changes in community development pattern (Figure 4.1).

Figure 4.1 Support for different types of town development options
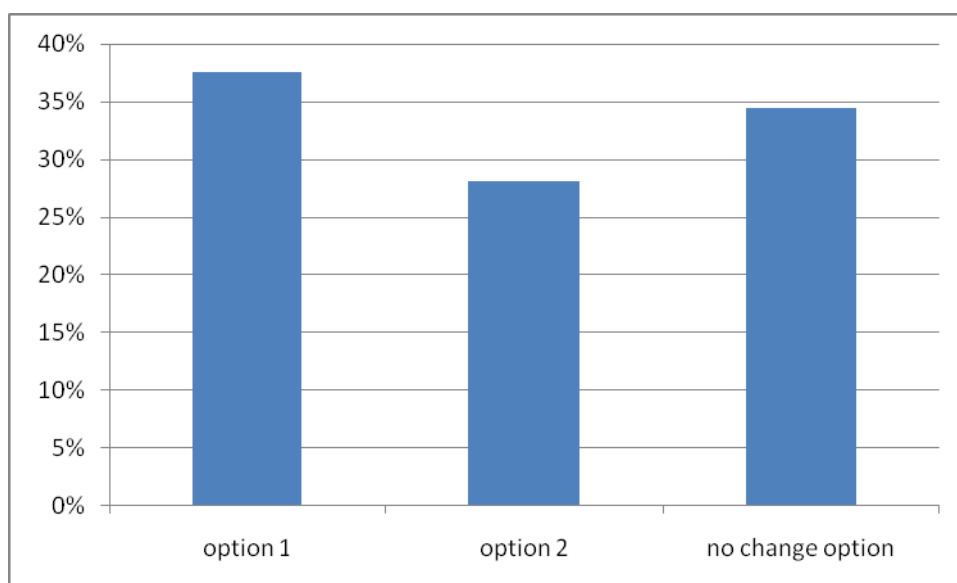
The choice information was analysed using a logistic regression (multinomial logit) model. The probability that a respondent would choose a particular town development can be related to the levels of each attribute making up the profile (and the alternative profiles on offer), the socio-economic characteristics of the respondent, and other factors. A summary description of the variables used in the statistical analysis and the original questions used in the survey is provided in Table 4.1.

Table 4.1 Variables used in the Choice Modelling analysis

Variable	Description/Original Question
ASC	Alternative Specific Constant (capturing the influence of other factors on choice)
Cost	Additional annual costs to your household
Accommodation	Extra amount of housing available for people on low incomes
Health	Number of private GP and health services
Shopping	Number and size of stores and restaurants
Work Camps	The proportion of the new workforce located in a work camp
Female	Gender
Children	Have children live in your household?
Biloela	Live in Biloela
Moura	Live in Moura
Theodore	Live in Theodore

A summary of the logistic regression model is presented in Table 4.2.

Table 4.2 Multinomial Logit model for Choice Modelling experiment

	Coefficient	Standard Error	Parthworth, expected	Confidence intervals for Parthworth (95%)	
				lower CI	Higher CI
Constant	0.220	0.244			
Cost	-0.001***	0.000			
Health	0.637***	0.079	$826.69	$403.19	$3,320.41
Accommodation	0.004***	0.002	$5.33	$0.91	$23.92
Work Camps	-0.010***	0.002	-$12.11	-$50.35	-$5.65
Shopping	-0.001	0.002	Not sig		
Income (x 100,000)	-0.269*	0.152			
Children	0.411***	0.148			
Moura	0.307*	0.163			
Biloela	0.000	0.174			
Theodore	0.448**	0.186			
Number of observations		945			
Log likelihood function		-943.1			
Adjusted Rho-sqrd		0.0865			

*** = significant at the 1% level, ** = significant at the 5% level, * = significant at the 10% level.

For residents, each of the Choice Modelling attributes, except the Shopping attribute, was significant in explaining the choices between the options. Respondents were more likely to prefer the future scenarios that had higher levels of the attributes. As expected, they were less likely to choose scenarios that came at a higher cost. Having a lower income and having children in the family both increased the probability that improvement options were preferred. Gender and the age of respondent were not significant predictors in this model.

Whether respondents lived in Moura, Biloela or Theodore had a significant impact on respondent choices. Residents who lived in Theodore and to a lesser extent Moura were more likely than Biloela residents to select improvement options, suggesting that these issues were more important to residents of those communities. This suggests that Biloela residents were less inclined to prefer improvement scenarios for their town, perhaps because Biloela is already larger and has more services.

The logistic regression function can be used to generate probabilities of choice, and estimates of economic value between different choice profiles. As well as these estimates of economic values, the models can also be used to generate estimates of marginal value changes for each attribute. Known as part-worths, implicit prices, or attribute values, these provide an indication of the annual value to respondents of each one unit change in the provision of an attribute (Rolfe, et al. 2000).

To compare results between models, part-worths were estimated for the attributes using the following equation:

Part-worth = -1 x Attribute coefficient/payment coefficient.

Summary results for the part-worths are also shown in Table 4.2. In each model, the part-worths show the value of a one-unit change in the attribute. For example, a change in the level of the accommodation attribute was valued at $4 per year by respondents. The part-worths signal the value of changes within each attribute no matter whether the change is a loss or improvement for the residents.

The results provide some indication about the relative importance of the different attributes, with the Level of Health attribute being relatively more significant than the other attributes. Of the other three attributes, the level of Workcamps, and Accommodation attributes appeared to be slightly more important than Shopping in determining choices.

4.1 Identifying Differences in Values within Attributes

Some of the attributes used in the Choice Modelling were categorical and ordinal rather than being metric. In particular, the level of Health services was categorical. To determine if values were associated with particular categories of this attribute, the analysis had to be extended. Separate models were developed for Health services attribute in turn to compare choices a) between levels one and two; b) between levels two and three and c) between levels one and three. The results of these different models are summarised in Table 4.3.

For Health services attribute, there was a significant and positive value in moving from the lowest level to the highest level (Table 4.3). For example, respondents valued the change from the "No change in health services" development option to the "Private GPs/Doctors plus allied health services doubles in numbers" development option at $708 per household per year. The values associated with intermediate changes (from level 2 to level 3) were not significant.

Table 4.3 Part Worths associated with changes in levels of Health services attribute

	Level 1 to Level 2		Level 1 to Level 3		Level 2 to Level 3	
	Coeff.	Part-worth	Coeff.	Part-worth	Coeff.	Part-worth
Health services	1.014***	$708	0.973***	$680	-0.040	-$28

*** = significant at the 1% level, ** = significant at the 5% level, * = significant at the 10% level.

The model was expanded to investigate the differences between towns. The results (Table 4.4) showed that the Shopping attribute was not significant in any town, while Health and Workcamps attributes were significant in all towns. Accommodation was only a significant attribute in Moura but not in Biloela or Theodore. Females in Theodore tended to opt for higher levels of attributes, while having children was a significant predictor in Moura but not in other towns.

Table 4.4 Multinomial Logit model for Choice Modelling experiment by towns.

	Moura			Biloela			Theodore		
	Coefficient	Standard Error	Parthworth expected	Coefficient	Standard Error	Parthworth, expected	Coefficient	Standard Error	Parthworth, expected
Constant	0.4548**	0.1830		0.2757*	0.1657		0.1482	0.1999	
Cost	-0.0018***	0.0005		-0.0017***	0.0005		-0.0001	0.0006	

Health 3	0.9944***	0.2950	$543	1.0925***	0.2752	$656	0.7229*	0.3586	Not Sig
Health 2	1.1401***	0.1986	$623	1.2641***	0.1840	$759	0.4935*	0.2404	Not Sig
Accomm	0.0063**	0.0026	$3	0.0030	0.0023	Not Sig	0.0017	0.0032	Not Sig
Work Camps	-0.0176***	0.0028	($10)	-0.0069***	0.0023	-$4	-0.0098***	0.0032	Not Sig
Shopping	-0.0014	0.0024	Not Sig.	-0.0008	0.0022	Not Sig	-0.0028	0.0031	Not Sig
Female	0.0918	0.2241		0.2046	0.2239		0.5701**	0.2773	
Children	0.7344***	0.2393		0.2801	0.2379		0.1607	0.2779	

Number of obs	363	369	210
Log likelihood function	-335.0367	-363.326	-216.0645
Adjusted Rho-sqrd	0.15	0.098	0.044

SECTION FIVE: RESULTS OF THE CHOICE BEHAVIOR EXPERIMENT

A critical issue in town development, especially when a region is facing a labour shortage, is to attract and retain population. While some methods (e.g. hedonic pricing analysis, choice modelling) identify tradeoffs among options, they do not necessarily provide insights into how the behaviour of respondents might change if they are to face different town development options. Choice behaviour analysis can fill this gap by identifying drivers of relocation options.

To provide a reference point for analysis of the contingent behaviour data, respondents were first asked about their intentions to stay in the town. Then respondents were asked to choose how many years they would stay in their town under different development options. This choice was made with the profiles presented in the Choice Modelling section.

When respondents were asked "How <u>long</u> do you think you will continue to live in this town?" the mean number of years respondents stated they planned to live in their respective towns was 9.4 years. The results are summarised in Figure 4. About 52 % of respondents indicated that they would likely to live in their town for more than 10 years and 4.3% of respondents thought that they would stay in their town for less than a year.

After consideration of the potential situation if the current development is unchanged, the mean number of years respondents stated they planned to live in their respective towns reduced to 8.5 years. About 45 % of respondents indicated that they would likely to live in their town for more than 10 years and 2. 4% of respondents thought that they would stay in their town for less than a year. The number of respondents indicated that they would stay for 1 to 2 years increased from 9% to almost 14% and the number of respondents indicated that they would stay for 4 to 5 years increased from 9% to almost 19% when the result of the current development was explained to respondents.

Figure 5.1 How many years respondents would stay in their towns?
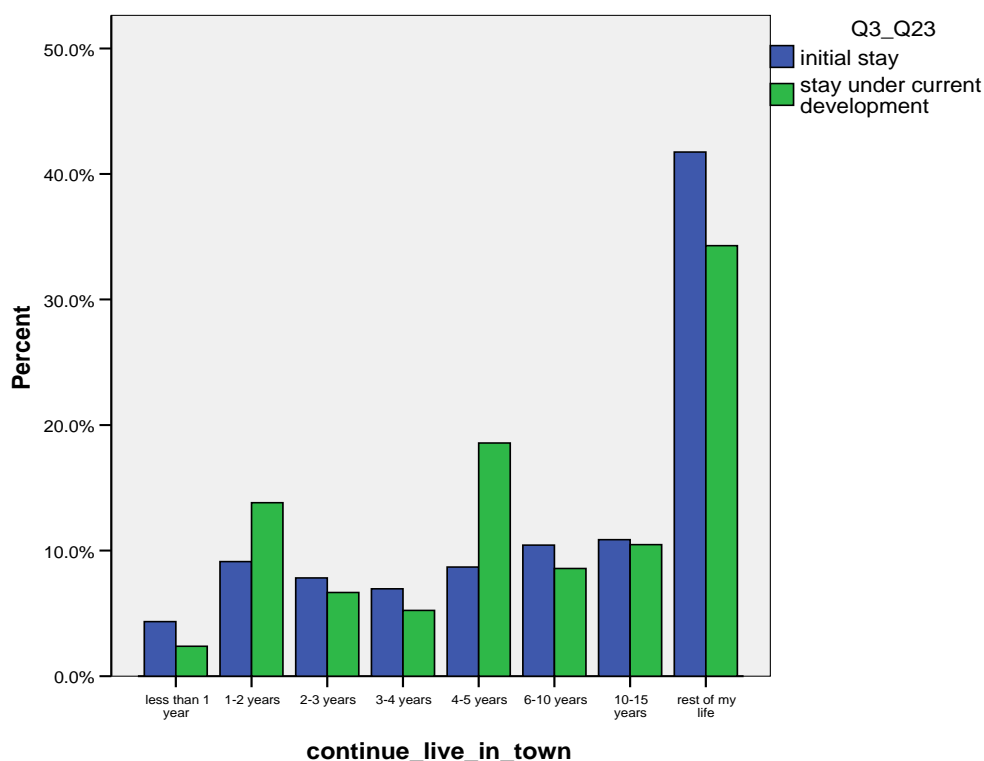
In the contingent behaviour model, the impacts of different development options were reflected in changes in the predicted length of stay in town. Linear regression models (Table 5.2) were significant in relating the planned stay to the attributes of the development options and the characteristics of respondents. The results showed that all variables are highly significant predicting the number of years respondents would choose to live in their town. Options with more housing development rather than workcamps increased the willingness of people to stay longer in towns. The results from model 2 suggest that responses are different in Moura and Biloela as compared with Theodore.

Table 5.2 Model for Choice of Duration of Residence under Different Development Options (all towns).

	Model 1		Model 2	
	Unstandardized coefficient	Standard error	Unstandardized coefficient	Standard error
Constant	47.274***	17.438	-65.736**	25.967
Cost	-0.749***	0.048	-0.750***	0.048
Health	-34.625***	12.637	-34.384***	12.568
Accommodation	-1.555***	0.277	-1.572***	0.276
Work Camps	-2.398***	0.286	-2.402***	0.285
Shopping	-2.240***	0.265	-2.245***	0.264
Female	0.244*	0.140	0.242*	0.140
Children	0.005	0.162	-0.024	0.161
Income			0.001***	0.000
Moura			53.980**	21.261
Biloela			68.792***	20.822
Degree of freedom		2854		2851

	R Square	0.26	0.27
	Adjusted R Square	0.26	0.27

These results were explored further by identifying separate models for each community. For Theodore residents, all attributes were significant, suggesting that improvements in each area are important to maintain population in the town. Health was not significant in either Biloela or Moura, while having children is not a significant predictor in Biloela or Moura but is in Theodore. Being a female was a significant predictor, increasing the stated length of staying in Biloela and Theodore.

Table 5.3 Model for Choice of Duration of Residence under Different Development Options by town.

	Biloela		Theodore		Moura	
	Unstandardized coefficient	Standard error	Unstandardized coefficient	Standard error	Unstandardized coefficient	Standard error
Constant	17.088	28.322	79.677**	36.306	55.695**	28.403
Cost	-0.747***	0.077	-0.682***	0.101	-0.799***	0.078
Health	-31.490	20.583	-64.216**	25.737	-21.237	20.187
Accomm	-0.789*	0.455	-2.671***	0.566	-1.625***	0.438
Work Camps	-2.196***	0.467	-3.153***	0.578	-2.164***	0.458
Shopping	-2.133***	0.433	-2.685***	0.542	-2.058***	0.421
Female	0.262*	0.143	54.203**	24.415	-27.249	20.120
Children	0.007	0.202	-54.058**	24.422	27.528	20.125
Degree of freedom		1117		631		1090
R Square		0.225		0.355		0.265
Adjusted R Square						
		0.221		0.347		0.26

SECTION SIX: ATTITUDES TO COAL MINING DEVELOPMENT IN THE REGION

A key part to the survey was a block of questions on current coal mining development and its effects on the local communities. Respondents were asked for their level of agreement, using a five point scale whereby one stood for "Strongly disagree" and five stood for "Strongly agree". The set of questions were made of positive and negative statements, thus the data was tested for its scale reliability as a whole set and reported a coefficient alpha of **.52**. It was decided that the set should be split into a positive and negative set in order to increase the scale reliability. The positive set reported an alpha of **.76** and the negative set reported an alpha of **.68**. It therefore can be assumed that the meaning of this scale is reasonably consistent across a range of different respondents.

The data informed that all three town respondents somewhat disagreed that house and rent prices are a good outcome. Those surveyed in Moura and Theodore seem to share the view that mining companies do not necessarily know what the community wants, while those surveyed in Biloela had a slightly more neutral view on the statement. Again residents asked in Biloela (mean=3.54) seemed more positive on the view that mining development provides opportunities to invest in other business whilst residents surveyed Theodore had a more cautious view (mean=3.08). Respondents in Moura seemed to single themselves out over the view that contractors would be beneficial to local towns by somewhat disagreeing (mean 2.73) as well as over the view that it attracts new mining families (mean=2.89) whereas respondents in Biloela had a more positive outlook on those two issues (figure 6.1).

It is perhaps interesting to note then that on the set of negative impact statements Moura's respondents overall has a slightly more positive view and in particular disagreeing somewhat more on cost burdens caused by mining, possibility of rates increasing and being more cautious regarding future town development. In contrast Biloela's respondents seemed to agree more on the negative statements overall. However, of those surveyed in all three towns agreed more strongly regarding the community not getting a say on mining activities (figure 6.2).

The next question went into the issues caused by mining development focusing more on the current housing demands and pressures. Of those surveyed in Moura agreed most (mean=4.07) that development of housing is preferable to work camps, while Biloela respondents did less so (mean=3.73). Most notable though respondents in Moura seems to be of the view that the increase of work camps could cause families to leave town and settle along the coast (mean=3.97) and Theodore respondents somewhat agree less (mean=3.53) (figure 3.30).

Figure 6.1 Positive statements on current mining development[3]
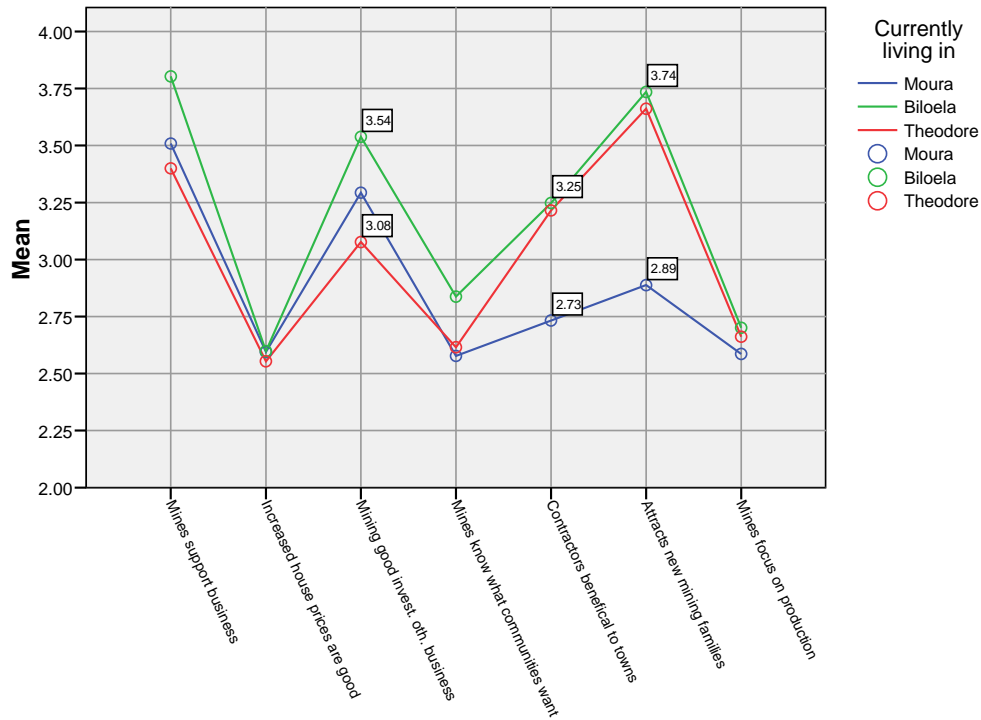
Figure 6.2 Negative statements on current mining development

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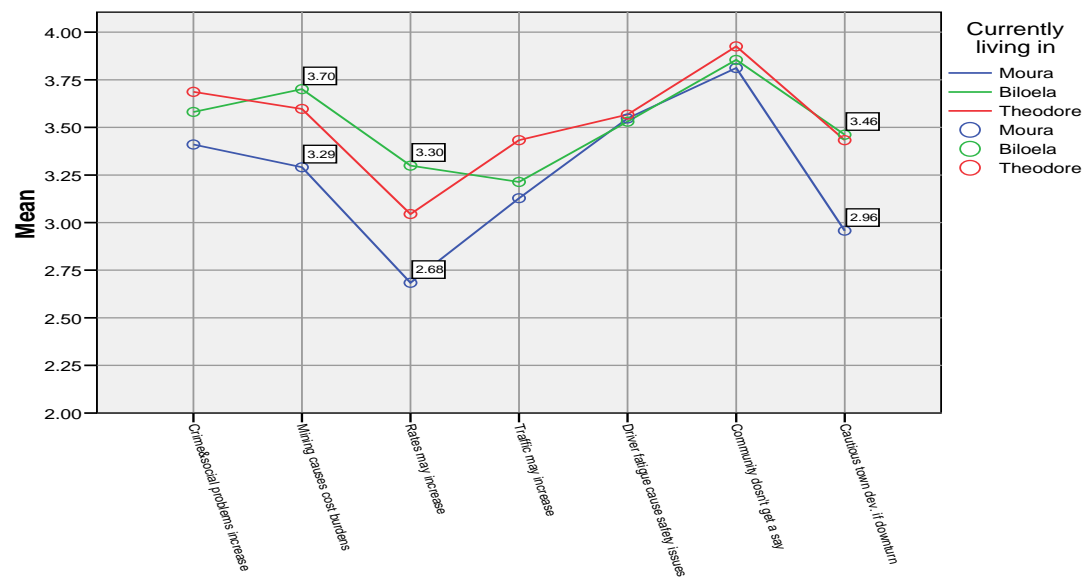
[3] The correlation matrix showed moderate to high correlation between the variables in the scale measures in this question. The Bartlett's test of sphericity showed a value of 869.14 and an associated level of significance <.001, therefore the hypnosis that the correlation matrix is an identity matrix is rejected. Multiple regression of a dependent variable namely 'currently living in' (Moura, Biloela, Theodore) showed that there was a linear relationship between the predictor and the independent variable both for the positive and negative statements with an R^2 of .16 and .22 respectively. The analysis of variance (ANOVA) showed the model was a good fit for the data with the probability associated with F value of 8.95 for the positives values is <.001 and the negative F value of 5.64 is <.001 and therefore the hypnosis that there is no linear relationship between the positive and negative predictors and the dependent variable of the "towns the respondents live in" is rejected.

Figure 6.3 High housing demands[4]
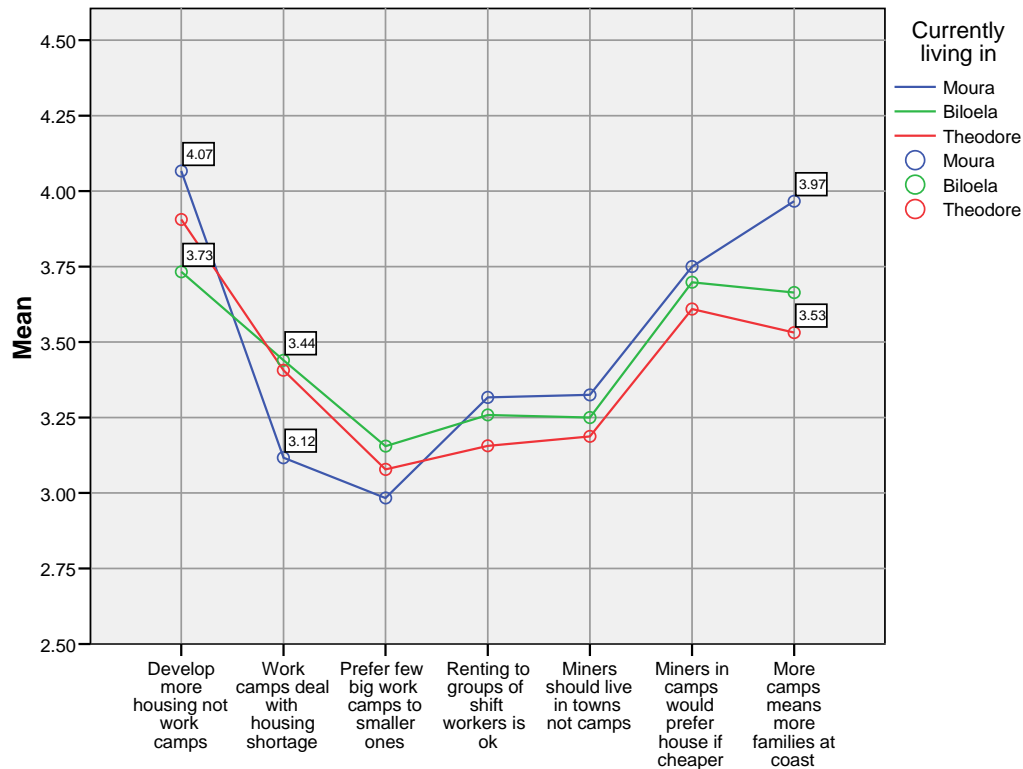
The survey also tried to capture the hypothetical scenario of where respondents would move to if they did leave their town one day to which the majority of 28 percent replied that they'd move somewhere on the Central Queensland coast. The other major group would move to other parts of Queensland (26%) followed by 21 percent moving to South East Queensland.

The final part of the survey looked at the personal level mining development had on residents of Moura, Biloela and Theodore and factors that could have caused stress in the last twelve months. Reliability of the scale reported α=**.88**. Based on the mean of the five point scale whereby 1 stood for "Not at all" and five stood for "Very much", the data suggests that overall most factors mentioned did not cause too much stress if at all. Financial or economical reasons did cause a 'sort of' stress in the surveyed household across all three towns. Respondents in Moura possibly suffer marginally more stress caused by factors such as emotions, workplace and the town itself.

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[4] The correlation matrix showed moderate correlation between the variables in the scale measures in this question. The Bartlett's test of sphericity showed a value of 250.26 and an associated level of significance <.001, therefore the hypnosis that the correlation matrix is an identity matrix is rejected. Multiple regression of a dependent variable namely 'currently living in' (Moura, Biloela, Theodore) showed that there was a linear relationship between the predictor and the independent variable with a modest but statistically significant R^2 of .06. The analysis of variance (ANOVA) showed the model was a good fit for the data with the probability associated with F value of 5.86 for the values is <.001 and therefore the hypnosis that there is no linear relationship between the predictors and the dependent variable of the "towns the respondents live in" is rejected.

Figure 6.4 Stress factors[5]
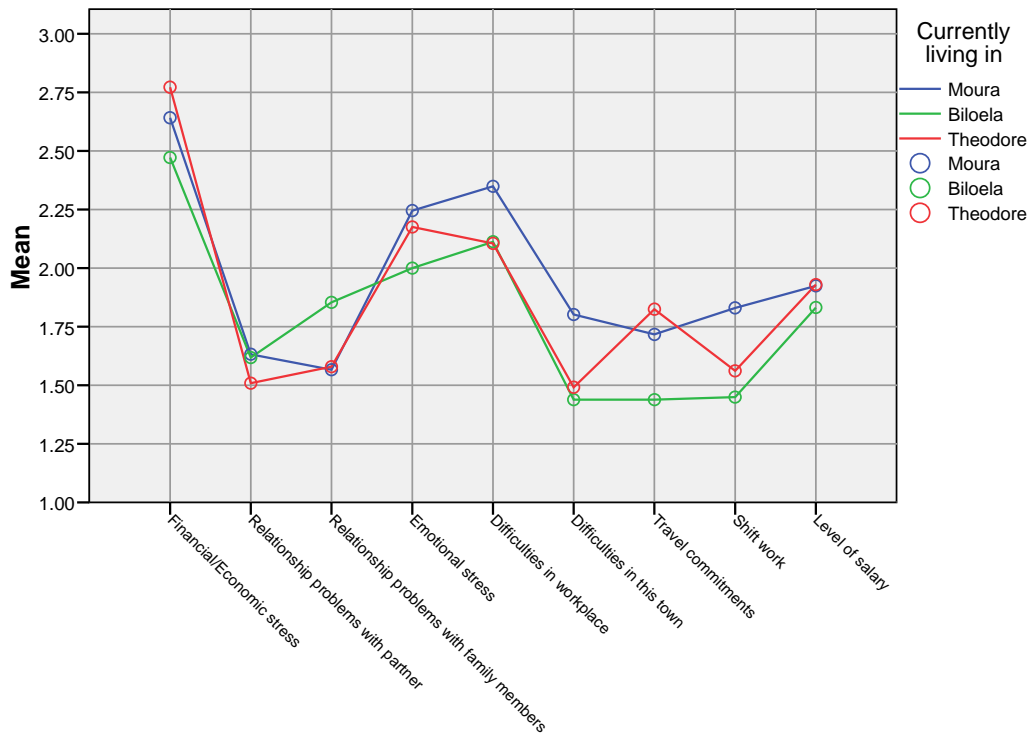
Section Seven: Preferences among community groups

7.1 Segmenting to predict behaviour of community groups

In this section of the analysis, data is viewed and reported through the underlying groups of the local population, including a natural representative sub-sample of mine employees, on issues and attitudes toward housing and services arising from living in a mining affected town during a boom period. The community survey data were evaluated to determine if there were particular groups of respondents who might have different wants and needs in response to increased mining activities and miners in the community. The categorisation of the community into groups provided a vital way of summarising local attitudes and behaviours associated with these pressure responses. Within the survey, a set of five questions collected a number of psychographic measures. These were derived from the internationally accepted Schwartz Values Scale (Schwartz 1992, Schwartz & Boehnke 2004). The researchers developing this scale propose that enduring goals and

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[5] The correlation matrix showed a very high correlation between the variables in the scale measures in this question. The Bartlett's test of sphericity showed a value of 618.61 and an associated level of significance <.001, therefore the hypnosis that the correlation matrix is an identity matrix is rejected. Stress is a particular phenomenon and possibly associated with residents moving into a new area. The data was split 50 percent on <=10 yrs and >10yrs. Multiple regression of the first <=10yrs group on the dependent variable namely 'currently living in' (Moura, Biloela, Theodore) showed that there was a linear relationship between the predictor and the independent variable with a sound statistically significance of R^2.217. The analysis of variance (ANOVA) showed the model was a good fit for the data with the probability associated with F value of 2.65 for the values is <.01 and therefore the hypnosis that there is no linear relationship between the predictors and the dependent variable of the "towns the respondents live in" is rejected.

aspirations brought about by a number of key dimensions of motivations which are inherent in all people.

These key dimensions are aligned through a number of high order values that have relevance to individual differences of people within their cultural settings. The five motivations collected in the community survey parallel the earlier mining employee's survey, which were hedonism, security, benevolence and tradition, power orientation, and universalism. These five motivational scores were optimally scaled through the process of generalised Euclidean individual differences scaling (Bentler & Weeks 1978); producing scores which were used for rotating the motivational values into high order dimensions (Schwartz and Boehnke 2004) . The high order dimensions retrieved from the data in this way were:

- Affective autonomy vs. Embeddedness,
- Egalitarianism vs. Hierarchy, and
- Master vs. Harmony.

Embedded individuals are those who view themselves as embedded in the collectivity of their culture. ***Affective autonomy individuals*** find meaning in their own uniqueness and are encouraged to express their preferences, feelings and desires. ***Egalitarian individuals*** recognise one another as equals and feel concern for the welfare of others. ***Hierarchy individuals*** on the other hand are individuals who feel the need to engage in productive work, necessary to maintain society. It also defines willingness to accept an unequal distribution of power as legitimate. ***Mastery individuals*** are oriented more to self-assertion and are happy to change the natural and social environment to attain personal goals. ***Harmony individuals*** hold the opposite view and accept the world as it is, trying to understand rather than to change or exploit. This orientation also emphasises being harmonious with the environment.

7.2 The segments

Subsequent to the development of the high order dimensions, the researchers clustered the community respondents using the categorical data of family status, gender and industry group of employer and the continuous data from the Schwartz Values Scale to produce segments which were clusters of both descriptive and explanatory data. A two step clustering process, defined by the continuous high order values variables first and then with the categorical demographics variables, defined four community household segments (Figure 7.1) using the standard Bayesian information criterion (Bentler & Weeks 1978), with the survey sample providing a breakdown ranging from 19% to 29%.

Figure 7.1 Household segments as percentage of respondent data
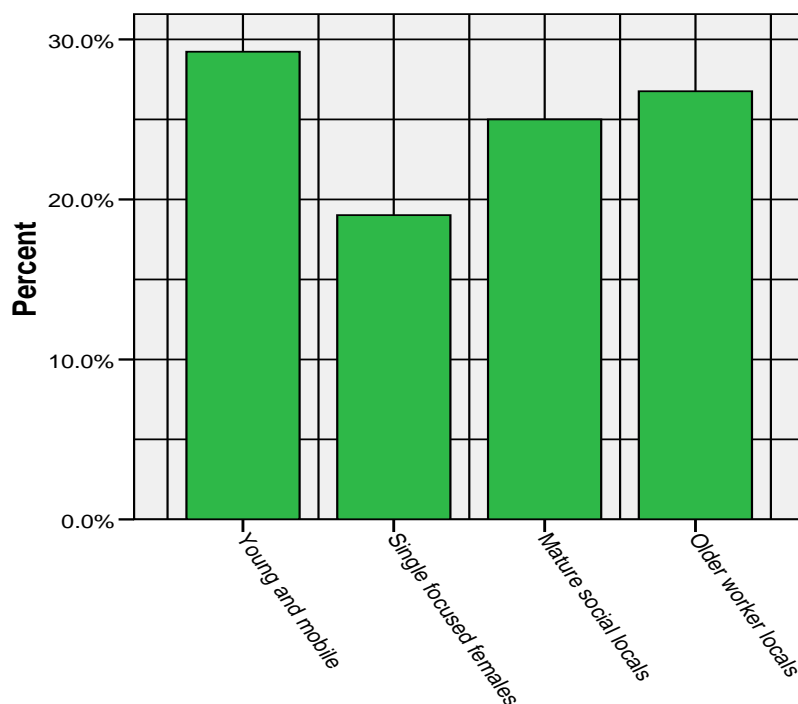
The segments are combination of respondent and household data and are thus (except when a single person household) are a composite of psychographic, demographic and self reported behavioral profiles of each household (Figure 7.1).

1. 'Young and mobile' Comprised mostly couples that rent or have their accommodation provided by their employer. This group are very hierarchical and are high affective autonomists, which is to say this group above all others believe in themselves and their happiness first. They are all 'recent' arrivals to the town with 33% having lived in their town less than 2 years, and 74% have been in their town less than five years. This group are also the most ambitious and Mastery oriented - a motive in natural opposition to the harmony orientation of the *Older worker locals,* (4) below.

2. 'Single focused females' are single, separated or divorced, or widowed and mostly single person households. This group is 'culturally embedded', and are strongly motivated to security through social ties with neighbours and friends. Despite the short-hand title, approximately 20% of this group are male, but are of the same culturally embedded type, and are also single, separated, divorced or widowed. The segment covers a broad age range, and also contains two 'knots' in resident duration; the first is 33% of the segment who have arrived in the last 3 years and the second knot are the 59% who have lived in town ten years or more (Figure 6.2).

3. 'Mature social locals' are households which are married couples that are highly egalitarian oriented who are motivated more strongly to benevolence, tradition and community service. All long term locals, with 9% having lived in their town 10-15 years and 91% have lived in their town more than 15 years.

4. 'Older worker locals' are older couples that have a very high harmony orientation, in Australian colloquial parlance, these are the 'she'll be right' type of people, who have a gestalt-based optimism that things will work out fine without fretting over details or trying to change things as long as everyone gets a 'fair go'. This group are also mostly long term locals with 93% having lived here more than ten years. These are the oldest group (Figure 7.2) and hold opposing ideals to the ambitious *Young and mobile* group.

Figure 7.2 Segments by age in years
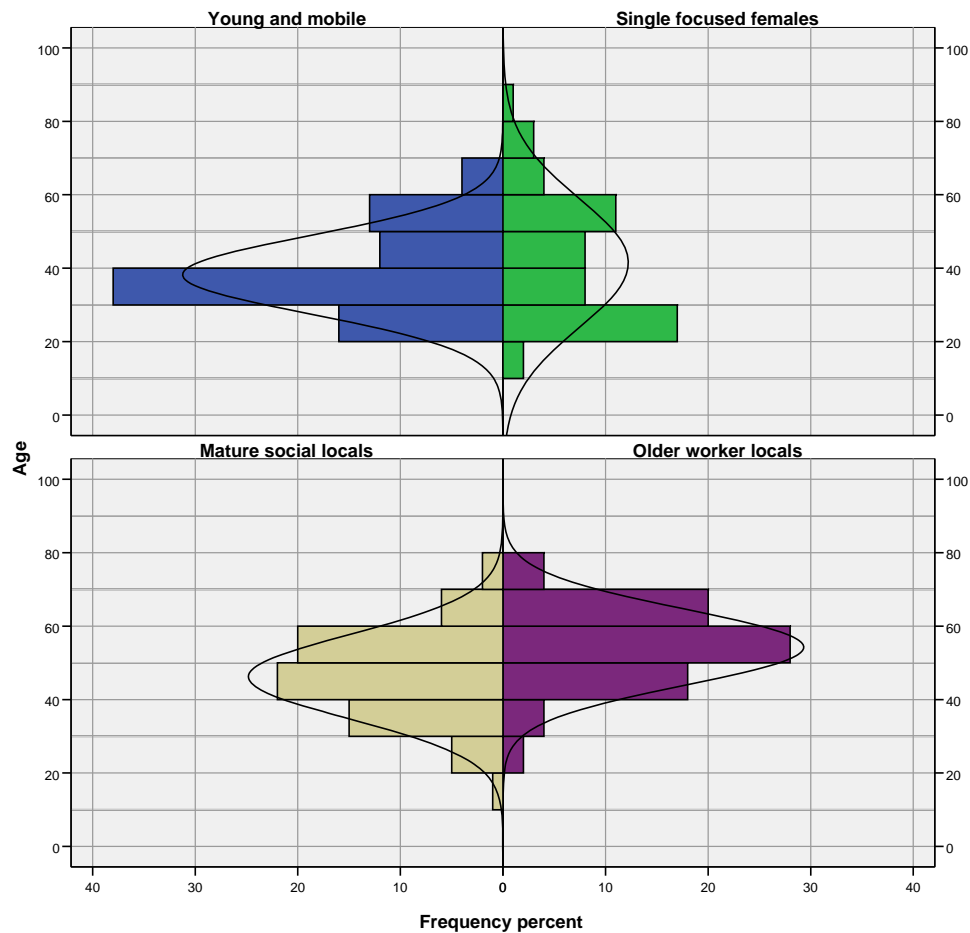
7.3 Comparisons of tenancy patterns by community segment groups

The community segmented groups have been cross tabulated with other groups of variables in order to build predictors of community response to varying impacts of mining company (and mining employee) on housing and other services their towns. In the descriptions of the segmented groups the researchers characterised the values orientations and showed that these have a connection with duration spent in the town. In Figure 6.3 it is notable that the *Young and Mobile* have all moved to their current dwelling in the last ten years. This also holds true for 40% of *Single focused females*. The *Mature social locals* and *Older worker locals* share a longer attachment with their towns with 100% and 93% respectively having been there for more than ten years. The *Young and mobile* live up to their name and show they are also happy to move on as easily as they came, with only 14% declaring they believe they will stay 10 years or more. This contrasts extraordinarily with other groups, particularly the *Older worker locals*. Despite being on average 16 years older, 58% are willing to commit to ten or more years in their current town.

Figure 7.3 Current tenancy vs planned tenancy duration by segment
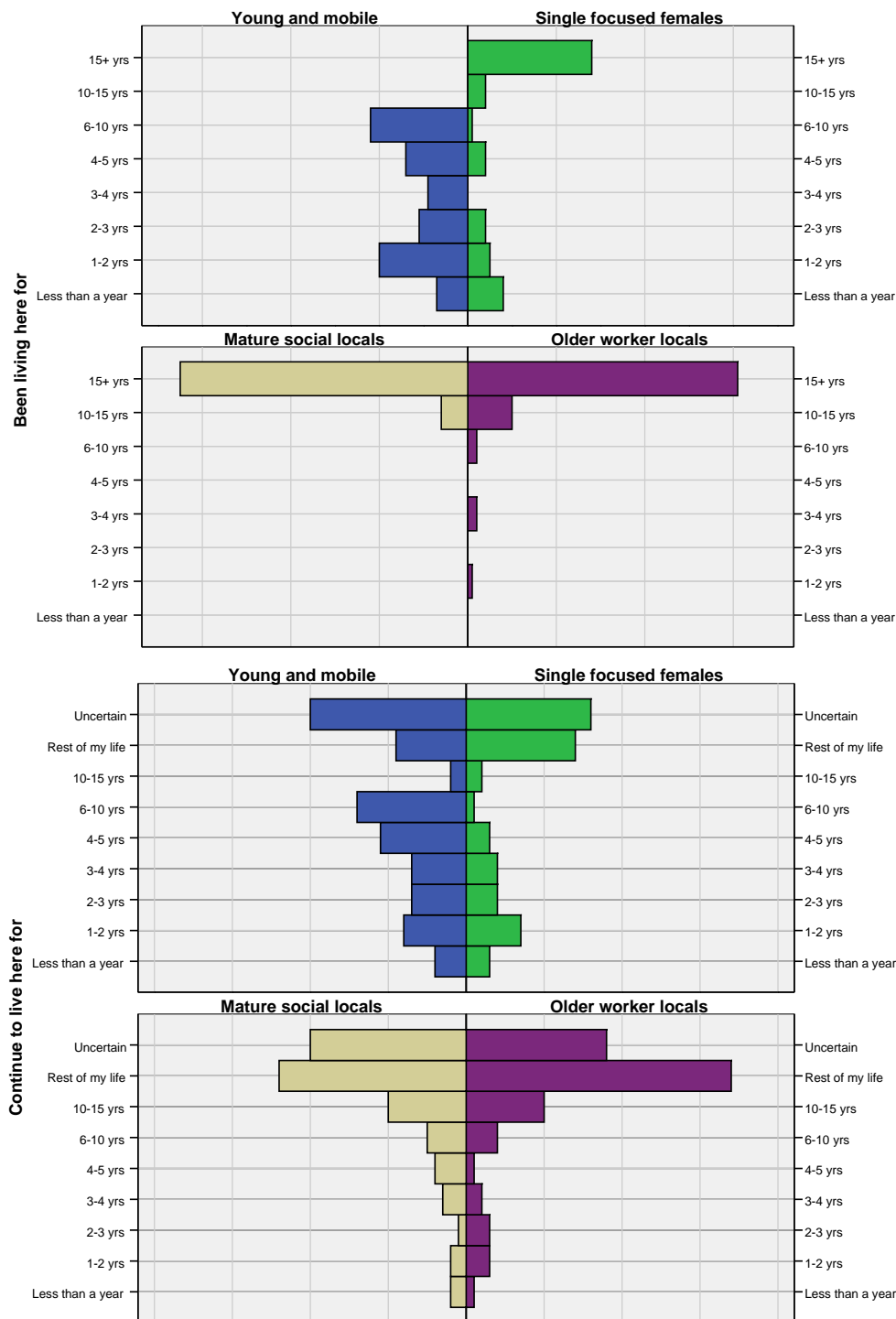
The *Mature social locals* group have the highest proportion of outright house ownership with 89% living in their own two or three adult households (Figure 6.3). Perhaps not coincidentally this group has the highest household income with 57% of the group's household income exceeding $100,000 per annum, and 19% exceeding $150,000 per annum. The lowest proportion of household ownership is held by the *Young and mobile* group, who have 43% of outright house ownership, and a further 4% owned with assistance of their employer. *Young and mobile* households have a marginally greater ownership of second home investment or recreation

properties at 42%, compared with 38% for the two senior local segments and 19% for the *Single focused females*.

Figure 7.4 Type of home tenancy by segment
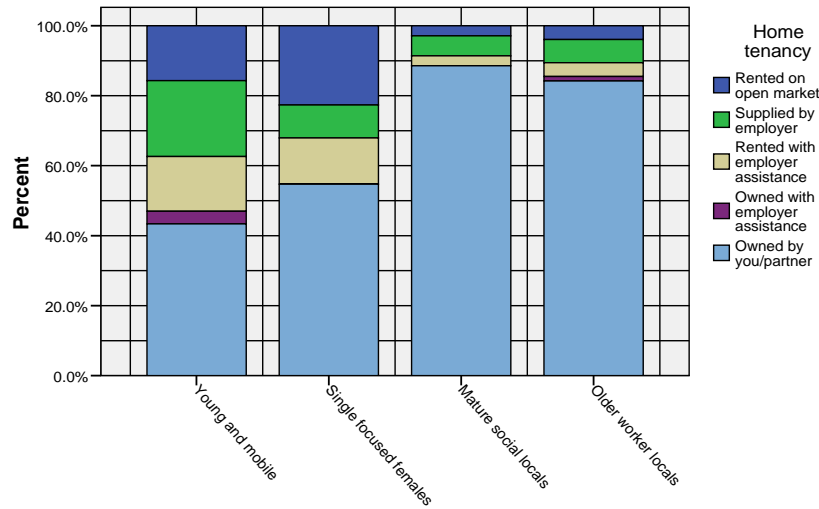
It can be observed from the salary spreads (Figure 7.5) that the segments show marked differences in salary distribution. The *Young and mobile* and *Mature social locals* have a reasonably normal distribution with some level of skew towards higher incomes, whereas the *Single focused females* and *Older worker locals* have some variability in income patterns, with the former group skewed towards lower incomes. This indicates that other unaccounted factors may be sub-dividing these two sub-samples.

Figure 7.5 Household income distribution by household segment
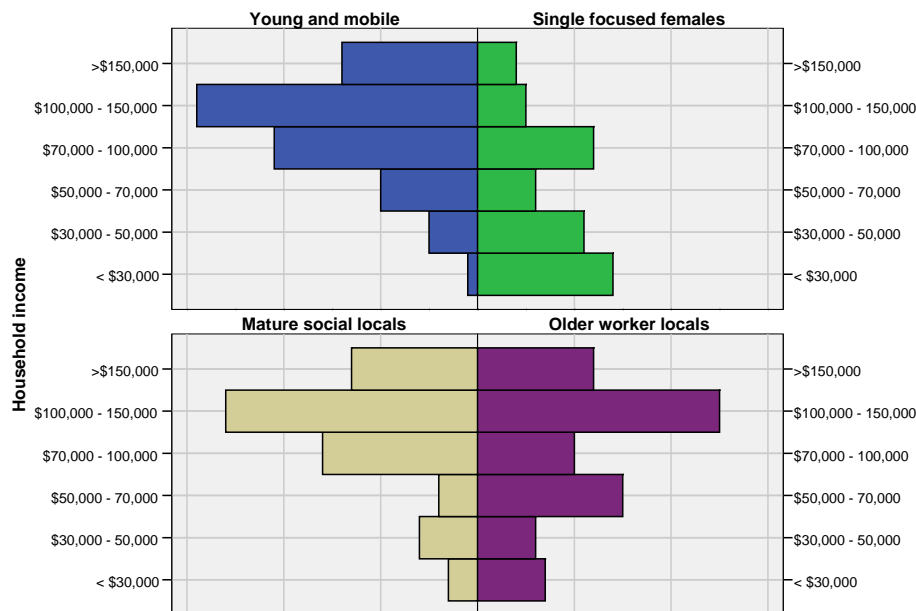
7.5 Segment patterns in factor importance of mining development and housing impacts

In identifying community aspirations it is important to assess the range of views of different stakeholders, as these can be key factors in explaining development patterns. For the purposes of

strategic implementation, the groups of stakeholders and their views on mining issues are the four segmented community groups, identified through the demographic and psychographic composite scores. In this analysis the housing preferences and other data are compared across segments to identify any patterns of demand.

The data are not entirely independent of each other, that is to say, views on mining related issues will turn on whether the household has miners in it, and the extent to which they are happy in their arrangements with the mining company. To get a picture of the potential connection, the number of mining employees in each segment's household are first examined (Figure 6.5). The two previously noted wealthier households, *Young and mobile* and *Mature social locals,* also have the highest proportion of households with one or more miners at 51% and 57% respectively. Secondly, remembering that *Single focused females* are 50% single person households, when observing they are the household group with the lowest proportion of mine employees, a cross-tab reveals that in the same group that have more than one adult, on average 35% of those adults are mine employees. Thirdly with somewhat different inputs, the same result applies to *Older worker locals*, who with 19% single person households, yield the same 35% mine employees in their households with more than one adult. This makes the number of miners in the household more like a 'constant' that is moderated by whether there is more than one adult in household.

Figure 7.6 Miners in household by segment
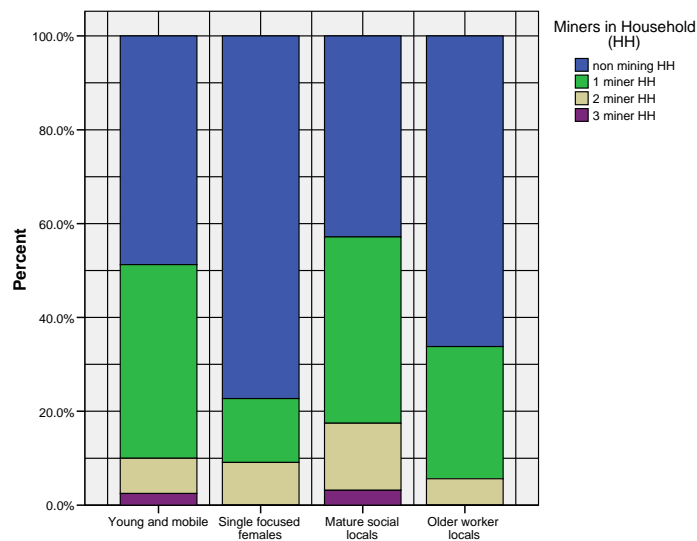
Having established the profiles for the community groups, attention turns to differences between groups in their outlook toward housing demand issues (Figure 7.7). In the graph the numbers on the horizontal axis refer to the *t-statistic,* showing the strength of difference between the groups. A value of two in either direction indicates a significant difference in importance rating of the variable (issue) between the groups.

The *Young and mobile* group feel significantly more positive about 'renting to groups of miners' than the other groups. The *Older worker locals* have values opposing the *Young and mobiles*, and are significantly opposed to 'renting to groups of miners'. Even more significant for the *Older worker locals* is their strongly positive view on 'develop more housing, not work camps' attribute, which is in turn is significantly opposed by *Single focused females*, who believe more positively that work camps help to deal with housing shortages. *Mature social locals* hold both views

simultaneously that although miners should live in town, not in work camps, that work camps do help deal with the housing shortage.

Figure 7.7 Patterns in community groups' response to housing demand issues
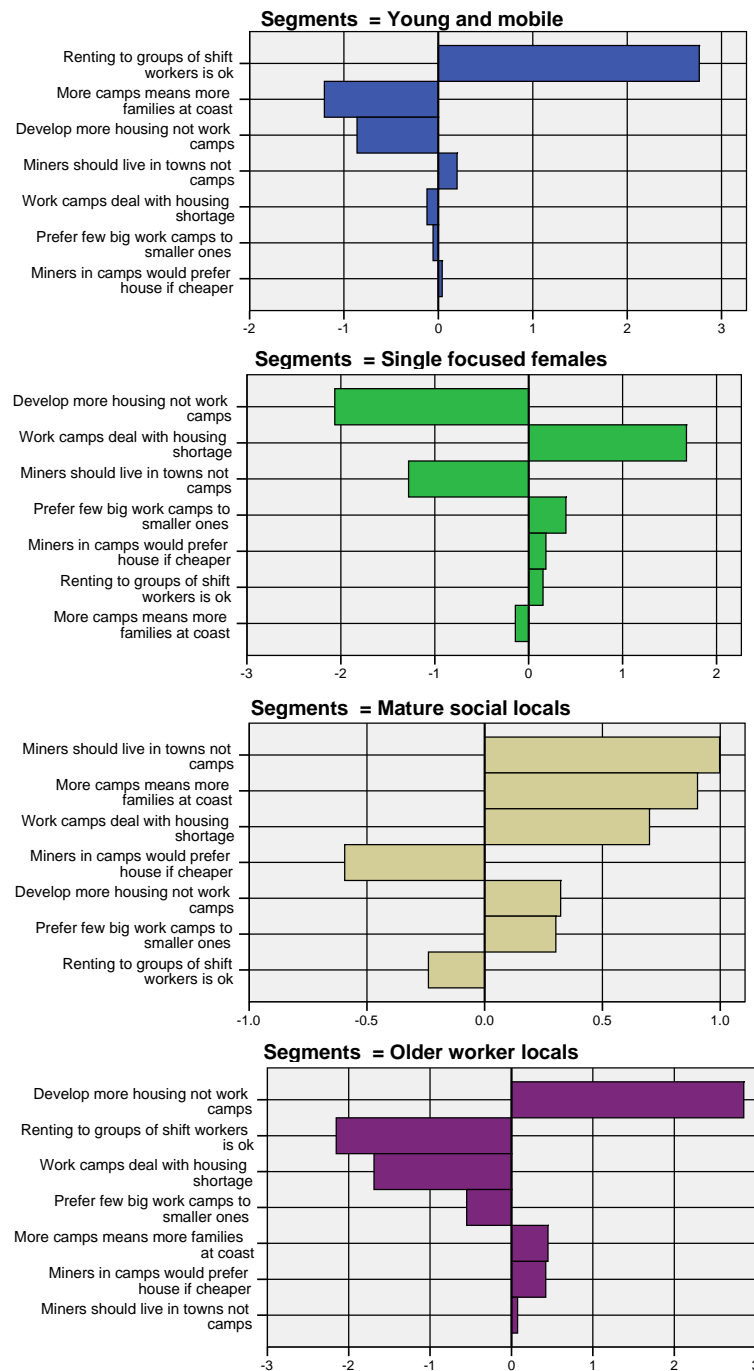
The views that the community groups take toward mining activities while living in mining towns in periods of growth help to understanding where stakeholder forces are either pulling in complimentary or different directions (Marsh 1998). The views taken by the *Young and Mobile* group indicate they are very positive about mining development. This group are significantly negative toward negative impacts and positive toward positive impacts, and may reflect that 51% of these households have one or more mining employees.

One might expect then the *Mature social locals*, who have an even higher 57% of their group's households comprising one or more mining employees, would feel the same way. Not so; this is group has multiple contrasting views such as denying that mining brings cost burdens whilst also denying that mining creates good investments in the region. The reasons for the contrast between groups are unknown, although one plausible reason may be the difference in age between the *Mature social locals* and the *Young and mobile* groups indicates the 'intergenerational household' factor. Here the attitudes expressed in the survey could be the views of parents of the mining employees living with *Mature social locals* while the views of the independent *Young and mobile* are their own.

Figure 7.8 Patterns in community groups' response to mining development issues
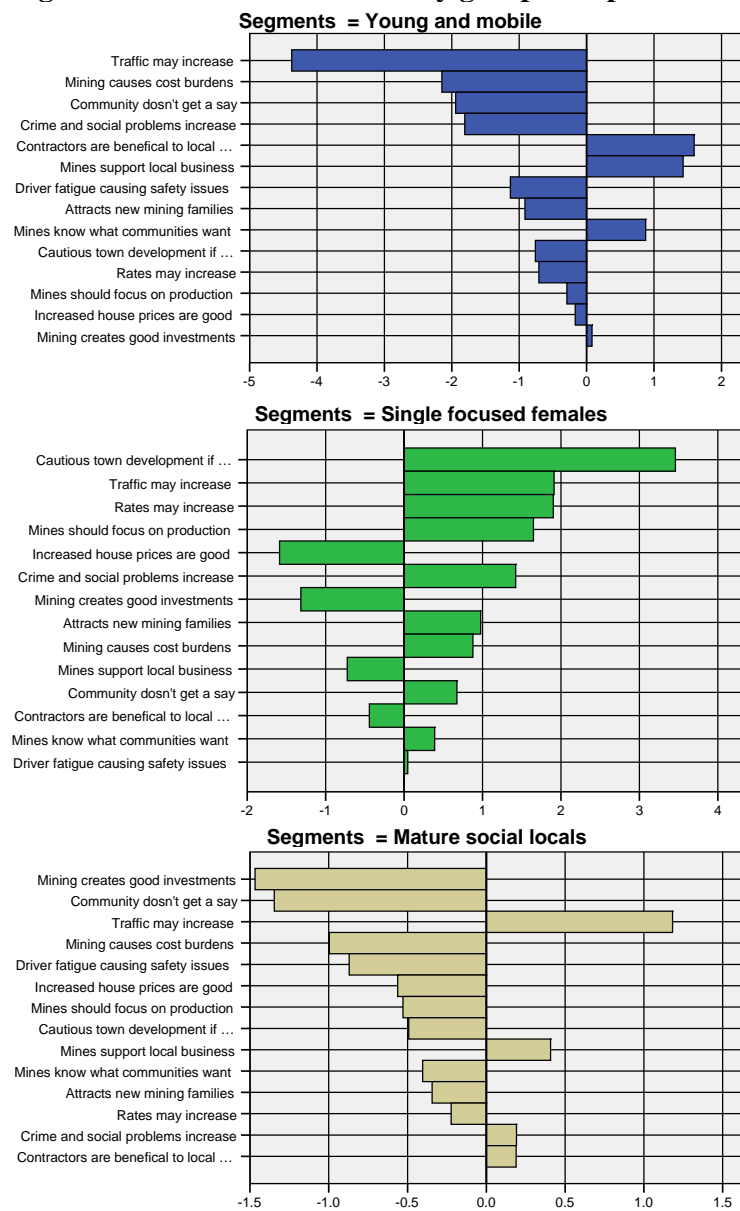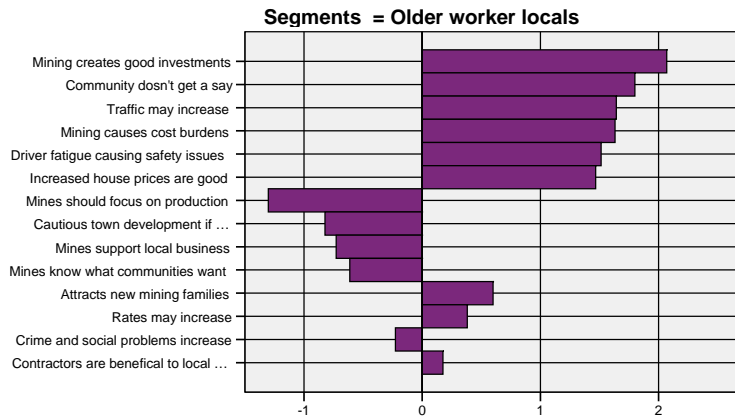
The *Single focused females* support cautious town development most strongly and are generally negative about the impacts of mining development. Being on a lower average household income than the other groups, the issues of house ownership, increased rates and house prices, are clearly drawn as personal impacts.

The segmented community groups were also cross tabulated with the scales previously analysed at the town level, and the following features emerged.

1. The *Young and mobile* group like living in their towns the least, and would move to another town given the opportunity, contingent upon better education services being available, and indicate low expectations on a better lifestyle.

2. The *Single focused females* like living in their towns the next least, and believe there is not a good mix of people, nor mix of age groups for them. In the ratings given to the motivations given for moving to another town, perhaps not surprisingly, strongest was given to 'social set', and better housing, better lifestyle and better investment.

3. The *Mature social locals* enjoy living in their towns, find it a relaxed lifestyle and convenient to other locations but display concern about the town being a safe place to live. As to motives given for moving to another town, this group rate 'health and other services' a lot higher than the other groups, and find their recreational services as they exist satisfactory.

4. The *Older worker locals* enjoy living in their town the most, find their towns have a country town aspect with friendly people and a safe place to live. In their ratings for motives to move another town, they gave the lowest ratings of all groups for job opportunities, education services, social set and better housing. All other motives to move rated low as well. This indicates that they find the town they live in now as satisfactory in most aspects.

SECTION EIGHT: CONCLUSION

The key focus of the work that is outlined in this report is identifying how different communities view housing needs and development options, where some in-depth information about community needs and trends are assessed in different ways. The analysis is presented in a case study format, where the housing demand predictions for three towns (Moura, Biloela and Theodore) are assessed in the context of being potential service communities for the nearby Dawson mine.

The results of this study are notable in that they confirm the similarities rather than the differences between communities. Each community has a reasonably stable population with similar views about town development. Most people live in a house that they own, with 11.2% in a home provided by their employer and 10.6% in rental accommodation. The majority of respondents do not plan to move or upgrade their home in the next five years. There were some barriers to upgrading or purchasing homes, particularly cost for Moura and Biloela residents.

There were some differences between the communities. Residents of the small rural community (Theodore) were more likely to plan to stay in the longer term than residents in the regional hub (Biloela), while residents of the largely mining town (Moura) were even more likely to be mobile. Relative to the different towns, residents of Moura viewed the town as a safe place to live, but considered involvement with sport, stability and a country town aspect as negative factors. In contrast, Biloela residents saw their town strengths in terms of involvement with sport and convenient access, but viewed safety as a negative factor, while Theodore residents saw the country town aspect, friendly people and quality of life as positive aspects, and convenient access to other centres as a negative one.

There were differences in community responses when residents were asked where they would move if they bought a new home. The majority of respondents in the mining town (Moura) would not stay in the same town, while the majority of respondent in the country town (Theodore) would not move out of the town, and residents in the regional hub (Biloela) were split between staying and moving.

The results do confirm that housing issues are important, and that housing pressures exist in communities. A key point of difference between the towns is that the cost of housing is seen as a bigger barrier to development in Moura than in Biloela and Theodore. The choice experiments about town development confirmed that health services, workcamp development and provision of social housing are important issues, while the level of shopping and restaurants had little impact on preferences. Here the most notable outcome of the choice experiments is the degree of similarity between communities in terms of the responses. The respondents wanted improved health services, wanted an increase in social housing, and did not want to see further workcamp development (instead of housing).

While there are some differences in attitudes between towns, it appears that there are stronger differences within the population groups than between towns. The short Schwartz survey instrument included in the questionnaire was designed to be manageable by those known to be unused or uncomfortable with abstract concepts like values (Lindeman & Verkasalo 2005). This

information allowed four segmented community groups to be identified from the demographic data and the psychosocial variables.

When the high order psychosocial dimensions of the Schwartz values are used to cluster for universal differences, what looks like a singular group of older local residents from the demographic data can be better categorised into two groups, *Mature social locals* and *Older worker locals*. These two groups had quite different views towards mining development. These groups are generally stable and enjoy living in their respective towns.

The other two groups are less settled. For the *Single young females*, the opportunities for building a social set are not currently optimal in their towns. The *Young and mobile group*, at 29% of this sample of the three towns in the case study area, whilst being a substantial part of the regional economy, are not happy about the standards of education facilities and do not really like living in their town. This indicates that education and other services will need to be more attractive to maintain those groups. *Mature social locals* also may also move if health services are not improved.

The results of the survey provide some guidance for town development issues in the Bowen Basin. While each town has its own character and strengths, there is a very high level of consistency about attitudes to development options. Residents want better services, including medical, want better support mechanisms, such as housing for socially disadvantaged groups, and do not want excessive workcamp development in their towns. The levels of retail and other commercial services do not appear to be so important, perhaps reflecting the mobility of people and access to larger centres.

The results also provide some indication of where towns and communities may be different. Residents in the mining town appear to be more mobile than the other communities, while residents of the country town are much less likely to relocate in the future. This suggests that mining towns are more likely to experience population fluctuations over longer time periods (both positive and negative). However, the larger differences were not so much between communities but across social groups. While older people were more likely to be settled, single and younger people are much more likely to only stay for a limited period of time in their communities. This suggests that smaller centres, whether mining or rural, will struggle to hold population in the longer term. A key focus of development for these towns should be to maintain the attractiveness of these communities for younger and single people.

SECTION NINE: REFERENCES

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APPENDIX 1 – TABLES

Statistics

Q30 Age

N	Valid	305
	Missing	13
Mean		46.2984
Std. Deviation		14.72331
Percentiles	25	34.0000
	50	47.0000
	75	56.0000

Q34. Which of the following best describes your current partner arrangements * Currently living in

			Currently living in			Total
			Moura	Biloela	Theodore	
Marital Status	Married/ de facto	Count	98	92	50	240
		% of Total	31.8%	29.9%	16.2%	77.9%
	Single - Never married / de facto	Count	11	16	6	33
		% of Total	3.6%	5.2%	1.9%	10.7%
	Single - separated / divorced	Count	8	9	9	26
		% of Total	2.6%	2.9%	2.9%	8.4%
	Single - widowed	Count	3	3	3	9
		% of Total	1.0%	1.0%	1.0%	2.9%
Total		Count	120	120	68	308
		% of Total	39.0%	39.0%	22.1%	100.0%

Q35. Which broad income range is relevant for your household?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< $30,000	31	9.7	10.3	10.3
	$30,000 - 50,000	33	10.4	10.9	21.2
	$50,000 - 70,000	41	12.9	13.6	34.8
	$70,000 - 100,000	61	19.2	20.2	55.0
	$100,000 - 150,000	90	28.3	29.8	84.8
	>$150,000	46	14.5	15.2	100.0
	Total	302	95.0	100.0	
Missing	Missing	16	5.0		
Total		318	100.0		

Q32. How many adults live in your household?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	58	18.2	18.5	18.5
	2	204	64.2	65.2	83.7
	3	35	11.0	11.2	94.9
	4	13	4.1	4.2	99.0
	5	2	.6	.6	99.7
	6	1	.3	.3	100.0
	Total	313	98.4	100.0	
Missing	-1	5	1.6		
Total		318	100.0		

Q31. Where did you grow up?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Rural	111	34.9	37.0	37.0
	Small Town	112	35.2	37.3	74.3
	Regional Town	42	13.2	14.0	88.3
	Major Town	35	11.0	11.7	100.0
	Total	300	94.3	100.0	
Missing	Missing	18	5.7		
Total		318	100.0		

Q2. Been living here for

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a year	16	5.0	5.1	5.1
	1-2 yrs	26	8.2	8.4	13.5
	2-3 yrs	15	4.7	4.8	18.3
	3-4 yrs	12	3.8	3.9	22.2
	4-5 yrs	19	6.0	6.1	28.3
	6-10 yrs	26	8.2	8.4	36.7
	10-15 yrs	25	7.9	8.0	44.7
	15+ yrs	172	54.1	55.3	100.0
	Total	311	97.8	100.0	
Missing	Missing	7	2.2		
Total		318	100.0		

Q3. Continue to live here for

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than a year	10	3.1	3.2	3.2
	1-2 yrs	21	6.6	6.8	10.0
	2-3 yrs	18	5.7	5.8	15.8
	3-4 yrs	16	5.0	5.2	21.0
	4-5 yrs	20	6.3	6.5	27.4
	6-10 yrs	24	7.5	7.7	35.2
	10-15 yrs	25	7.9	8.1	43.2
	Rest of my life	96	30.2	31.0	74.2
	Uncertain	80	25.2	25.8	100.0

	Total	310	97.5	100.0	
Missing	-1	8	2.5		
Total		318	100.0		

Q4. Work in Industry

		Currently living in					
		Moura		Biloela		Theodore	
		Count	Column Total N %	Count	Column Total N %	Count	Column Total N %
industries grouped	Primary industry	6	4.9%	21	17.1%	12	16.9%
	Secondary industry	8	6.6%	13	10.6%	6	8.5%
	Tertiary & services	36	29.5%	36	29.3%	20	28.2%
	Government	19	15.6%	17	13.8%	14	19.7%
	Not working	14	11.5%	8	6.5%	7	9.9%
	Mining & associated	37	30.3%	14	11.4%	4	5.6%

Q5a. What is your occupation?

		Count	Table Total N %
Your occupation	Managers/Admin	25	7.9%
	Professionals	43	13.5%
	ParaProfessionals	41	12.9%
	Clerical	43	13.5%
	Sales/Services	49	15.4%
	Trade	23	7.2%
	Plant/Machinery	37	11.6%
	Labourers	12	3.8%
	Student	2	.6%
	Unemployed	0	.0%
	Retired	20	6.3%
	Home Duties	18	5.7%
	Total	313	100.0%

Q5b. What is your partners' occupation?

		Count	Table Total N %
Your partner's occupation	Managers/Admin	17	5.3%
	Professionals	26	8.2%
	ParaProfessionals	22	6.9%
	Clerical	19	6.0%
	Sales/Services	18	5.7%
	Trade	22	6.9%
	Plant/Machinery	60	18.9%
	Labourers	24	7.5%
	Student	0	.0%
	Unemployed	0	.0%
	Retired	15	4.7%
	Home Duties	26	8.2%
	Total	249	100.0%

Q6. How long you travel to work * Currently living in Cross-tabulation

			Currently living in			Total
			Moura	Biloela	Theodore	
How long you travel to work (Binned)	<= 5min	Count	53	58	33	144
		% of Total	20.6%	22.6%	12.8%	56.0%
	6 - 10min	Count	16	19	8	43
		% of Total	6.2%	7.4%	3.1%	16.7%
	11- .15min	Count	18	18	2	38
		% of Total	7.0%	7.0%	.8%	14.8%
	15min+	Count	12	6	14	32
		% of Total	4.7%	2.3%	5.4%	12.5%
Total		Count	99	101	57	257
		% of Total	38.5%	39.3%	22.2%	100.0%

Q6. How long you travel to work

N	Valid	258
	Missing	60
Mean		.1688
Median		.0830

Q6b. How long your partner travels to work * Currently living in Cross-tabulation

			Currently living in			Total
			Moura	Biloela	Theodore	
How long your partner travels to work (Binned)	<= 5min	Count	27	38	16	81
		% of Total	13.7%	19.3%	8.1%	41.1%
	6 - 15min	Count	36	18	8	62
		% of Total	18.3%	9.1%	4.1%	31.5%
	16 - 30min	Count	10	4	2	16
		% of Total	5.1%	2.0%	1.0%	8.1%
	30min+	Count	15	9	14	38
		% of Total	7.6%	4.6%	7.1%	19.3%
Total		Count	88	69	40	197
		% of Total	44.7%	35.0%	20.3%	100.0%

Q6b. How long your partner travels to work

N	Valid	198
	Missing	120
Mean		.2556
Median		.1600

Q7. Continuous shift work * Currently living in Cross-tabulation

			Currently living in			Total
			Moura	Biloela	Theodore	
Continuous shift work	No	Count	56	101	50	207
		% of Total	17.9%	32.4%	16.0%	66.3%
	Yes	Count	65	21	19	105
		% of Total	20.8%	6.7%	6.1%	33.7%
Total		Count	121	122	69	312
		% of Total	38.8%	39.1%	22.1%	100.0%

Q7. How many on shift work * Currently living in Cross-tabulation

			Currently living in			Total
			Moura	Biloela	Theodore	
How many on shift work	One Person	Count	51	17	17	85
		% of Total	49.0%	16.3%	16.3%	81.7%
	Two people	Count	11	4	1	16
		% of Total	10.6%	3.8%	1.0%	15.4%
	Three + people	Count	2	0	1	3
		% of Total	1.9%	.0%	1.0%	2.9%
Total		Count	64	21	19	104
		% of Total	61.5%	20.2%	18.3%	100.0%

Q7b. Spend time when off shift * Currently living in Cross-tabulation

			Currently living in			Total
			Moura	Biloela	Theodore	
Spend time when off shift	Spend time in this town	Count	53	20	18	91
		% of Total	52.5%	19.8%	17.8%	90.1%
	Spend time elsewhere	Count	8	1	1	10
		% of Total	7.9%	1.0%	1.0%	9.9%
Total		Count	61	21	19	101
		% of Total	60.4%	20.8%	18.8%	100.0%

Q8. Perception of Community

	Currently living in		
	Moura	Biloela	Theodore
	Mean	Mean	Mean
Friendly people	4.2	4.3	4.5
Safe place to live	4.5	4.3	4.6
Good mix of people	4.0	4.2	4.4
Good mix of age groups	4.0	4.1	4.1
Good place to bring up children	4.3	4.4	4.5
Stable	3.9	4.2	4.3
Relaxed lifestyle	4.1	4.3	4.4
High involvement with sport	2.8	3.8	3.4
Convenient access to other centres	3.5	3.6	3.1
Country town aspect	4.1	4.3	4.6
I enjoy living in this town	4.2	4.3	4.6
I like the quality of life where I live	4.1	4.4	4.6
Other	3.5	5.0	5.0

Q9. Currently living in * Current type of home Cross-tabulation

		Current type of home					Total
		House	Flat	Unit or Duplex	Caravan park	SPQ/ work camp	

Currently living in	Moura	% within Currently living in	91.8%	1.6%	1.6%	4.1%	.8%	100.0%
		% within Current type of home	37.6%	50.0%	25.0%	83.3%	50.0%	38.4%
		% of Total	35.2%	.6%	.6%	1.6%	.3%	38.4%
	Biloela	% within Currently living in	95.9%	.8%	2.4%	.8%		100.0%
		% within Current type of home	39.6%	25.0%	37.5%	16.7%		38.7%
		% of Total	37.1%	.3%	.9%	.3%		38.7%
	Theodore	% within Currently living in	93.0%	1.4%	4.2%		1.4%	100.0%
		% within Current type of home	22.1%	25.0%	37.5%		50.0%	22.3%
		% of Total	20.8%	.3%	.9%		.3%	22.3%
	Other	% within Currently living in	100.0%					100.0%
		% within Current type of home	.7%					.6%
		% of Total	.6%					.6%
Total		% within Currently living in	93.7%	1.3%	2.5%	1.9%	.6%	100.0%
		% within Current type of home	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	93.7%	1.3%	2.5%	1.9%	.6%	100.0%

Q9. How many bedrooms

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	.6	.7	.7
	2	18	5.7	6.1	6.7
	3	176	55.3	59.3	66.0
	4	85	26.7	28.6	94.6
	5	14	4.4	4.7	99.3
	6	2	.6	.7	100.0
	Total	297	93.4	100.0	
Missing	-1	1	.3		
	System	20	6.3		
	Total	21	6.6		
Total		318	100.0		

Q9. How many Bathrooms

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	191	60.1	67.3	67.3
	2	88	27.7	31.0	98.2
	3	5	1.6	1.8	100.0
	Total	284	89.3	100.0	
Missing	-1	14	4.4		
	System	20	6.3		
	Total	34	10.7		
Total		318	100.0		

Q9. How many Car spaces

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	.9	1.1	1.1
	1	120	37.7	43.0	44.1
	2	119	37.4	42.7	86.7
	3	21	6.6	7.5	94.3
	4	11	3.5	3.9	98.2
	5	4	1.3	1.4	99.6
	6	1	.3	.4	100.0
	Total	279	87.7	100.0	
Missing	-1	19	6.0		
	System	20	6.3		
	Total	39	12.3		
Total		318	100.0		

Q9. Currently living in * Swimming pool Cross-tabulation

			Swimming pool		Total
			Yes	No	
Currently living in	Moura	% within Currently living in	17.1%	82.9%	100.0%
		% within Swimming pool	39.1%	37.2%	37.5%
		% of Total	6.4%	31.1%	37.5%
	Biloela	% within Currently living in	18.9%	81.1%	100.0%
		% within Swimming pool	45.7%	38.5%	39.6%
		% of Total	7.5%	32.1%	39.6%
	Theodore	% within Currently living in	11.3%	88.7%	100.0%
		% within Swimming pool	15.2%	23.5%	22.1%
		% of Total	2.5%	19.6%	22.1%
	Other	% within Currently living in		100.0%	100.0%
		% within Swimming pool		.9%	.7%
		% of Total		.7%	.7%
Total		% within Currently living in	16.4%	83.6%	100.0%
		% within Swimming pool	100.0%	100.0%	100.0%
		% of Total	16.4%	83.6%	100.0%

Q10. Currently living in * Is your current home Cross-tabulation

			Is your current home					Total
			Supplied by employer	Rented on open market	Rented with employer assistance	Owned with employer assistance	Owned by you/partner	
Currently living in	Moura	% within Currently living in	12.5%	10.0%	8.3%	1.7%	67.5%	100.0%
		% within Is your current home	42.9%	36.4%	40.0%	50.0%	37.7%	38.5%
		% of Total	4.8%	3.8%	3.2%	.6%	26.0%	38.5%

	Biloela	% within Currently living in	7.3%	6.5%	7.3%	1.6%	77.2%	100.0%
		% within Is your current home	25.7%	24.2%	36.0%	50.0%	44.2%	39.4%
		% of Total	2.9%	2.6%	2.9%	.6%	30.4%	39.4%
	Theodore	% within Currently living in	16.4%	19.4%	9.0%		55.2%	100.0%
		% within Is your current home	31.4%	39.4%	24.0%		17.2%	21.5%
		% of Total	3.5%	4.2%	1.9%		11.9%	21.5%
	Other	% within Currently living in					100.0%	100.0%
		% within Is your current home					.9%	.6%
		% of Total					.6%	.6%
Total		% within Currently living in	11.2%	10.6%	8.0%	1.3%	68.9%	100.0%
		% within Is your current home	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	11.2%	10.6%	8.0%	1.3%	68.9%	100.0%

Q11. Currently living in * Upgrade your home in next 5 yrs Cross-tabulation

			Upgrade your home in next 5 yrs			
			Yes, purchase	Yes, renovate	No	Total
Currently living in	Moura	% within Currently living in	14.3%	16.8%	68.9%	100.0%
		% within Upgrade your home in next 5 yrs	38.6%	40.8%	37.8%	38.4%
		% of Total	5.5%	6.5%	26.5%	38.4%
	Biloela	% within Currently living in	14.9%	14.0%	71.1%	100.0%
		% within Upgrade your home in next 5 yrs	40.9%	34.7%	39.6%	39.0%
		% of Total	5.8%	5.5%	27.7%	39.0%
	Theodore	% within Currently living in	13.2%	16.2%	70.6%	100.0%
		% within Upgrade your home in next 5 yrs	20.5%	22.4%	22.1%	21.9%
		% of Total	2.9%	3.5%	15.5%	21.9%
	Other	% within Currently living in		50.0%	50.0%	100.0%
		% within Upgrade your home in next 5 yrs		2.0%	.5%	.6%
		% of Total		.3%	.3%	.6%
Total		% within Currently living in	14.2%	15.8%	70.0%	100.0%
		% within Upgrade your home in next 5 yrs	100.0%	100.0%	100.0%	100.0%
		% of Total	14.2%	15.8%	70.0%	100.0%

Q12. Where would new home be_Region * Currently living in Cross-tabulation

			Currently living in			
			Moura	Biloela	Theodore	Total
Where would new home be_Region	Central QLD	Count	50	69	41	160
		% of Total	19.4%	26.7%	15.9%	62.0%
	SE QLD	Count	9	12	2	23
		% of Total	3.5%	4.7%	.8%	8.9%
	N QLD	Count	1	0	1	2
		% of Total	.4%	.0%	.4%	.8%
	Interstate	Count	1	1	0	2
		% of Total	.4%	.4%	.0%	.8%
	Coast unspecified	Count	19	16	5	40
		% of Total	7.4%	6.2%	1.9%	15.5%
	Other	Count	7	5	5	17
		% of Total	2.7%	1.9%	1.9%	6.6%
	Don't know	Count	10	3	1	14
		% of Total	3.9%	1.2%	.4%	5.4%
Total		Count	97	106	55	258
		% of Total	37.6%	41.1%	21.3%	100.0%

Q13. What would be they key item that you are looking for in a new home?

		Responses		Percent of Cases
		N	Percent	
What key items you are looking(a)	More bedrooms	80	8.9%	26.1%
	More bathrooms	81	9.0%	26.5%
	More garaging	71	7.9%	23.2%
	Pool	54	6.0%	17.6%
	Larger home	95	10.6%	31.0%
	Larger block	91	10.2%	29.7%
	Better quality	127	14.2%	41.5%
	Closer to services	100	11.2%	32.7%
	Energy efficient	127	14.2%	41.5%
	Other	22	2.5%	7.2%
	None	24	2.7%	7.8%
	Downsizing	8	.9%	2.6%
	Change location	16	1.8%	5.2%
Total		896	100.0%	292.8%

a Dichotomy group tabulated at value 1.

Q14. Currently living in * Barriers to upgrade to new home Cross-tabulation

			Barriers to upgrade to new home		
			No	Yes	Total
Currently living in	Moura	Count	61	60	121
		% of Total	20.0%	19.7%	39.7%
	Biloela	Count	67	47	114
		% of Total	22.0%	15.4%	37.4%
	Theodore	Count	27	41	68
		% of Total	8.9%	13.4%	22.3%

	Other	Count	0	2	2
		% of Total	.0%	.7%	.7%
Total		Count	155	150	305
		% of Total	50.8%	49.2%	100.0%

Q14b. What are the Barriers *Q1 Cross-tabulation

			Currently living in				Total
			Moura	Biloela	Theodore	Other	
What are the barriers to a new home(a)	Barriers to upgrade to new home	Count	61	67	27	0	155
		% of Total	20.2%	22.2%	8.9%	.0%	51.3%
	Too expensive	Count	50	44	27	2	123
		% of Total	16.6%	14.6%	8.9%	.7%	40.7%
	No choice	Count	12	6	14	0	32
		% of Total	4.0%	2.0%	4.6%	.0%	10.6%
	Lack quality	Count	14	5	11	0	30
		% of Total	4.6%	1.7%	3.6%	.0%	9.9%
	No builders	Count	22	11	21	1	55
		% of Total	7.3%	3.6%	7.0%	.3%	18.2%
	Building approval	Count	18	6	6	1	31
		% of Total	6.0%	2.0%	2.0%	.3%	10.3%
Total		Count	120	114	66	2	302
		% of Total	39.7%	37.7%	21.9%	.7%	100.0%

Percentages and totals are based on respondents.
a Dichotomy group tabulated at value 1.

Q13. Barriers Frequencies

		Responses		Percent of Cases
		N	Percent	
What are the Barriers(a)	Too expensive	123	45.4%	83.7%
	No choice	32	11.8%	21.8%
	Lack quality	30	11.1%	20.4%
	No builders	55	20.3%	37.4%
	Building approval	31	11.4%	21.1%
Total		271	100.0%	184.4%

a Dichotomy group tabulated at value 1.

Q15. Currently living in * Moved homes in town Cross-tabulation

			Moved homes in town		Total
			No	Yes	
Currently living in	Moura	Count	60	61	121
		% of Total	19.2%	19.6%	38.8%
	Biloela	Count	52	68	120
		% of Total	16.7%	21.8%	38.5%
	Theodore	Count	36	33	69
		% of Total	11.5%	10.6%	22.1%
	Other	Count	1	1	2
		% of Total	.3%	.3%	.6%
Total		Count	149	163	312
		% of Total	47.8%	52.2%	100.0%

Q15b. Currently living in * How often moved Cross-tabulation

			How often moved (Binned)					Total
			Once	Twice	3 times	4 times	More than 5 times	
Currently living in	Moura	Count	22	8	19	5	7	61
		% of Total	13.5%	4.9%	11.7%	3.1%	4.3%	37.4%
	Biloela	Count	24	13	19	5	7	68
		% of Total	14.7%	8.0%	11.7%	3.1%	4.3%	41.7%
	Theodore	Count	20	5	3	2	3	33
		% of Total	12.3%	3.1%	1.8%	1.2%	1.8%	20.2%
	Other	Count	1	0	0	0	0	1
		% of Total	.6%	.0%	.0%	.0%	.0%	.6%
Total		Count	67	26	41	12	17	163
		% of Total	41.1%	16.0%	25.2%	7.4%	10.4%	100.0%

Q15c. What were the main reasons?

		Currently living in					
		Moura		Biloela		Theodore	
		Count	Table Total N %	Count	Table Total N %	Count	Table Total N %
Found attractive home	Selected	23	11.1%	20	9.6%	8	3.8%
Rental became unavailable	Selected	10	5.5%	13	7.1%	2	1.1%
Rental became too expensive	Selected	8	4.7%	4	2.3%	3	1.7%
Need more room	Selected	12	6.2%	16	8.2%	8	4.1%
Upgrade to better home	Selected	17	7.7%	33	14.9%	15	6.8%
Financial attractive to do so	Selected	17	8.7%	19	9.7%	2	1.0%

Q16.1 List the last two towns you lived in – 1st mentioned

			Last 1st town lived in								Total
			SE QLD	North QLD	Central QLD	NW QLD	Bowen Basin	Interstate	Overseas	None	
Currently living in	Moura	Count	28	2	31	1	28	10	3	12	115
		% of Total	9.6%	.7%	10.6%	.3%	9.6%	3.4%	1.0%	4.1%	39.2%
	Biloela	Count	35	7	32	1	20	5	0	8	108
		% of Total	11.9%	2.4%	10.9%	.3%	6.8%	1.7%	.0%	2.7%	36.9%
	Theodore	Count	18	3	15	0	11	10	0	11	68
		% of Total	6.1%	1.0%	5.1%	.0%	3.8%	3.4%	.0%	3.8%	23.2%
	Other	Count	0	0	0	0	1	0	0	1	2

	t								
	% of Total	.0%	.0%	.0%	.0%	.3%	.0%	.0%	.3%	.7%
Total	Count	81	12	78	2	60	25	3	32	293
	% of Total	27.6%	4.1%	26.6%	.7%	20.5%	8.5%	1.0%	10.9%	100.0%

Q16.2 Last 2nd town lived in

			Last 2nd town lived in							
			SE QLD	North QLD	Central QLD	NW QLD	Bowen Basin	Interstate	Overseas	None	Total
Currently living in	Moura	Count	27	3	19	2	20	6	6	35	118
		% of Total	8.8%	1.0%	6.2%	.7%	6.5%	2.0%	2.0%	11.4%	38.4%
	Biloela	Count	23	10	15	2	11	8	3	47	119
		% of Total	7.5%	3.3%	4.9%	.7%	3.6%	2.6%	1.0%	15.3%	38.8%
	Theodore	Count	18	6	7	0	7	7	1	22	68
		% of Total	5.9%	2.0%	2.3%	.0%	2.3%	2.3%	.3%	7.2%	22.1%
	Other	Count	0	0	1	0	0	0	0	1	2
		% of Total	.0%	.0%	.3%	.0%	.0%	.0%	.0%	.3%	.7%
Total		Count	68	19	42	4	38	21	10	105	307
		% of Total	22.1%	6.2%	13.7%	1.3%	12.4%	6.8%	3.3%	34.2%	100.0%

Q17. What was the quality of your previous home *Currently living

			Quality of previous home			
			Same	Better	Worse	Total
Currently living in	Moura	Count	40	33	31	104
		% of Total	15.4%	12.7%	11.9%	40.0%
	Biloela	Count	23	23	54	100
		% of Total	8.8%	8.8%	20.8%	38.5%
	Theodore	Count	26	18	11	55
		% of Total	10.0%	6.9%	4.2%	21.2%
	Other	Count	0	0	1	1
		% of Total	.0%	.0%	.4%	.4%
Total		Count	89	74	97	260
		% of Total	34.2%	28.5%	37.3%	100.0%

Q18. Currently living in * Own another home Cross-tabulation

			Own another home		
			Yes	No	Total
Currently living in	Moura	Count	45	76	121
		% of Total	14.3%	24.2%	38.5%
	Biloela	Count	46	74	120
		% of Total	14.6%	23.6%	38.2%

			Yes	No	Total
	Theodore	Count	20	51	71
		% of Total	6.4%	16.2%	22.6%
	Other	Count	0	2	2
		% of Total	.0%	.6%	.6%
Total		Count	111	203	314
		% of Total	35.4%	64.6%	100.0%

Q18b. Currently living in * Main home elsewhere Cross-tabulation

			Main home elsewhere		Total
			Yes	No	
Currently living in	Moura	Count	32	86	118
		% of Total	10.6%	28.5%	39.1%
	Biloela	Count	23	93	116
		% of Total	7.6%	30.8%	38.4%
	Theodore	Count	5	61	66
		% of Total	1.7%	20.2%	21.9%
	Other	Count	0	2	2
		% of Total	.0%	.7%	.7%
Total		Count	60	242	302
		% of Total	19.9%	80.1%	100.0%

Q19. If you were to decide to live elsewhere, how important would the following reasons be?

	Currently living in		
	Moura	Biloela	Theodore
	Mean	Mean	Mean
Education Services	3.20	3.11	3.52
Health & Other Services	4.34	4.12	3.97
Cheaper to live	3.61	3.45	3.56
Better Investment	3.54	3.37	3.37
If Job Opportunities	3.64	3.65	3.69
Better shops	3.80	3.59	3.34
Better Lifestyle	3.73	3.69	3.45
Recreational Services	3.19	3.29	3.12
Better Housing	3.66	3.60	3.47
Social Set	2.72	2.55	2.68
Close to Family	3.38	3.42	3.45
Other	5.00	4.00	5.00

Q20. Currently living in * Prefer to live if commute Cross-tabulation

			Prefer to live if commute						Total
			Rockhampton	Gladstone	Other regional city	Central Queensland Coast	SE Queensland	Other	
Currently living in	Moura	Count	6	1	5	11	4	4	31
		% of Total	10.5%	1.8%	8.8%	19.3%	7.0%	7.0%	54.4%
	Biloela	Count	4	1	2	2	7	4	20

		% of Total	7.0%	1.8%	3.5%	3.5%	12.3%	7.0%	35.1%
	Theodore	Count	0	0	0	3	1	2	6
		% of Total	.0%	.0%	.0%	5.3%	1.8%	3.5%	10.5%
Total		Count	10	2	7	16	12	10	57
		% of Total	17.5%	3.5%	12.3%	28.1%	21.1%	17.5%	100.0%

Q21. Test model

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.759
Bartlett's Test of Sphericity	Approx. Chi-Square	869.142
	df	91
	Sig.	.000

Rotated Component Matrix(a)

	Component			
	1	2	3	4
Mines support local business	.609			
Increased house prices are good	.641			
Mining creates good investments	.805			
Mines know what communities want	.755			
Contractors are benefical to local towns	.588			
Attracts new mining families	.522			
Mines should focus on production				.758
Crime and social problems increase		.528		.413
Mining causes cost burdens			.806	
Rates may increase			.776	
Traffic may increase		.709		
Driver fatigue causing safety issues		.797		
Community dosn't get a say		.588		
Cautious town development if downturn				.662

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 6 iterations.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change

1	.398(a)	.159	.141	.706	.159	8.947	6	285	.000
2	.444(b)	.198	.169	.694	.039	3.418	4	281	.009
3	.459(c)	.211	.177	.691	.013	2.342	2	279	.098
4	.471(d)	.222	.182	.689	.011	1.952	2	277	.144

a Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want

b Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want, Crime and social problems increase, Traffic may increase, Community dosn't get a say, Driver fatigue causing safety issues

c Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want, Crime and social problems increase, Traffic may increase, Community dosn't get a say, Driver fatigue causing safety issues, Rates may increase, Mining causes cost burdens

d Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want, Crime and social problems increase, Traffic may increase, Community dosn't get a say, Driver fatigue causing safety issues, Rates may increase, Mining causes cost burdens, Mines should focus on production, Cautious town development if downturn

ANOVA(e)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.745	6	4.458	8.947	.000(a)
	Residual	141.994	285	.498		
	Total	168.740	291			
2	Regression	33.333	10	3.333	6.917	.000(b)
	Residual	135.407	281	.482		
	Total	168.740	291			
3	Regression	35.568	12	2.964	6.210	.000(c)
	Residual	133.171	279	.477		
	Total	168.740	291			
4	Regression	37.419	14	2.673	5.638	.000(d)
	Residual	131.321	277	.474		
	Total	168.740	291			

a Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want

b Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want, Crime and social problems increase, Traffic may increase, Community dosn't get a say, Driver fatigue causing safety issues

c Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are

good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want, Crime and social problems increase, Traffic may increase, Community dosn't get a say, Driver fatigue causing safety issues, Rates may increase, Mining causes cost burdens

d Predictors: (Constant), Attracts new mining families, Mines support local business, Increased house prices are good, Contractors are benefical to local towns, Mining creates good investments, Mines know what communities want, Crime and social problems increase, Traffic may increase, Community dosn't get a say, Driver fatigue causing safety issues, Rates may increase, Mining causes cost burdens, Mines should focus on production, Cautious town development if downturn

e Dependent Variable: Currently living in

Q21. Rate the following statements about current coal mining development - Positive

	Currently living in		
	Moura	Biloela	Theodore
	Mean	Mean	Mean
Mines support local business	3.50	3.80	3.38
Increased house prices are good	2.60	2.58	2.50
Mining creates good investments	3.29	3.53	3.03
Mines know what communities want	2.57	2.83	2.60
Contractors are beneficial to local towns	2.76	3.24	3.22
Attracts new mining families	2.93	3.75	3.71
Mines should focus on production	2.59	2.72	2.65

Q21. Rate the following statements about current coal mining development - Negative

	Currently living in		
	Moura	Biloela	Theodore
	Mean	Mean	Mean
Crime and social problems increase	3.39	3.58	3.70
Mining causes cost burdens	3.30	3.71	3.60
Rates may increase	2.67	3.31	3.03
Traffic may increase	3.10	3.19	3.47
Driver fatigue causing safety issues	3.55	3.49	3.57
Community doesn't get a say	3.78	3.86	3.96
Cautious town development if downturn	2.96	3.43	3.46

Q22. Rate the following statements about the current high demands for housing

	Currently living in		
	Moura	Biloela	Theodore
	Mean	Mean	Mean

Develop more housing not work camps	4.07	3.75	3.94
Work camps deal with housing shortage	3.12	3.44	3.35
Prefer few big work camps to smaller ones	2.98	3.19	3.09
Renting to groups of shift workers is ok	3.32	3.27	3.26
Miners should live in towns not camps	3.33	3.27	3.27
Miners in camps would prefer house if cheaper	3.75	3.69	3.67
More camps means more families at coast	3.95	3.66	3.59

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.544
Bartlett's Test of Sphericity	Approx. Chi-Square	250.263
	df	21
	Sig.	.000

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.811	25.867	25.867	1.192	17.029	17.029	1.056	15.087	15.087
2	1.540	22.004	47.871	1.085	15.494	32.524	.900	12.859	27.946
3	1.170	16.708	64.579	.532	7.599	40.123	.852	12.177	40.123
4	.775	11.071	75.650						
5	.707	10.104	85.753						
6	.584	8.338	94.091						
7	.414	5.909	100.000						

Extraction Method: Maximum Likelihood.

Model Summary(d)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					Sig. F Change	R Square Change	F Change	df1	df2
1	.194(a)	.038	.028	.751	.038	3.870	3	296	.010
2	.219(b)	.048	.032	.750	.010	1.553	2	294	.213
3	.242(c)	.058	.036	.748	.011	1.653	2	292	.193

a Predictors: (Constant), More camps means more families at coast, Miners in camps would prefer house if cheaper, Develop more housing not work camps
b Predictors: (Constant), More camps means more families at coast, Miners in camps would prefer house if cheaper, Develop more housing not work camps, Prefer few big work camps to smaller ones, Work camps deal with housing shortage

c Predictors: (Constant), More camps means more families at coast, Miners in camps would prefer house if cheaper, Develop more housing not work camps, Prefer few big work camps to smaller ones, Work camps deal with housing shortage, Renting to groups of shift workers is ok, Miners should live in towns not camps
d Dependent Variable: Currently living in

ANOVA(d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.551	3	2.184	3.870	.010(a)
	Residual	166.996	296	.564		
	Total	173.547	299			
2	Regression	8.297	5	1.659	2.952	.013(b)
	Residual	165.250	294	.562		
	Total	173.547	299			
3	Regression	10.147	7	1.450	2.590	.013(c)
	Residual	163.400	292	.560		
	Total	173.547	299			

a Predictors: (Constant), More camps means more families at coast, Miners in camps would prefer house if cheaper, Develop more housing not work camps
b Predictors: (Constant), More camps means more families at coast, Miners in camps would prefer house if cheaper, Develop more housing not work camps, Prefer few big work camps to smaller ones, Work camps deal with housing shortage
c Predictors: (Constant), More camps means more families at coast, Miners in camps would prefer house if cheaper, Develop more housing not work camps, Prefer few big work camps to smaller ones, Work camps deal with housing shortage, Renting to groups of shift workers is ok, Miners should live in towns not camps
d Dependent Variable: Currently living in

Q28. If you did move from this town one day, where do you think you would move to?

			Currently living in			
			Moura	Biloela	Theodore	Total
If you were to move from this town(a)	Other mine town in C-QLD	Count	9	2	2	13
		% of Total	3.1%	.7%	.7%	4.4%
	Other non-mine town in C-QLD	Count	7	5	3	15
		% of Total	2.4%	1.7%	1.0%	5.1%
	Rockhampton	Count	16	6	9	31
		% of Total	5.4%	2.0%	3.1%	10.5%
	Gladstone	Count	4	4	0	8
		% of Total	1.4%	1.4%	.0%	2.7%
	C-QLD coast	Count	38	30	14	82
		% of Total	12.9%	10.2%	4.8%	27.9%
	SE QLD	Count	16	36	9	61
		% of Total	5.4%	12.2%	3.1%	20.7%
	Other parts of QLD	Count	21	37	18	76
		% of Total	7.1%	12.6%	6.1%	25.9%
	Interstate	Count	13	5	7	25
		% of Total	4.4%	1.7%	2.4%	8.5%
	None	Count	2	0	0	2
		% of Total	.7%	.0%	.0%	.7%
Total		Count	118	118	58	294
		% of Total	40.1%	40.1%	19.7%	100.0%

Percentages and totals are based on respondents.
a Dichotomy group tabulated at value 1.

Q36. Indicate whether the following factors have caused stress in your household in the past 12 mths

	Currently living in		
	Moura	Biloela	Theodore
	Mean	Mean	Mean
Financial/Economic stress	2.68	2.50	2.77
Relationship problems with partner	1.62	1.63	1.48
Relationship problems with family members	1.59	1.88	1.61
Emotional stress	2.29	2.05	2.21
Difficulties in workplace	2.34	2.19	2.08
Difficulties in this town	1.86	1.42	1.48
Travel commitments	1.77	1.44	1.82
Shift work	1.83	1.44	1.55
Level of salary	1.96	1.89	1.90

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.858
Bartlett's Test of Sphericity	Approx. Chi-Square	618.611
	df	36
	Sig.	.000

Model Summary(c,d)

	R						Change Statistics			
Model	Been living here for >= 10-15 yrs (Selected)	Been living here for < 10-15 yrs (Unselected)	R Square	Adjusted R Square	Std. Error of the Estimate	df2	Sig. F Change	Been living here for >= 10-15 yrs (Selected)	Been living here for < 10-15 yrs (Unselected)	R Square Change
1	.214(a)		.046	.006	.781	.046	1.154	6	144	.334
2	.248(b)	.	.062	.002	.783	.016	.793	3	141	.500

a   Predictors: (Constant), Level of salary, Shift work, Difficulties in workplace, Travel commitments, Financial/Economic stress, Difficulties in this town

b   Predictors: (Constant), Level of salary, Shift work, Difficulties in workplace, Travel commitments, Financial/Economic stress, Difficulties in this town, Relationship problems with partner, Relationship problems with family members, Emotional stress

c Unless noted otherwise, statistics are based only on cases for which Been living here for >= 10-15 yrs.

d Dependent Variable: Currently living in

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %

1	3.771	41.900	41.900	3.204	35.596	35.596	1.861	20.683	20.683
2	1.015	11.275	53.175	.462	5.133	40.728	1.804	20.046	40.728
3	.888	9.868	63.043						
4	.756	8.396	71.439						
5	.665	7.394	78.833						
6	.591	6.571	85.404						
7	.507	5.637	91.041						
8	.439	4.875	95.916						
9	.368	4.084	100.000						

Extraction Method: Maximum Likelihood.

ANOVA(c,d)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.225	6	.704	1.154	.334(a)
	Residual	87.854	144	.610		
	Total	92.079	150			
2	Regression	5.682	9	.631	1.030	.419(b)
	Residual	86.397	141	.613		
	Total	92.079	150			

a   Predictors: (Constant), Level of salary, Shift work, Difficulties in workplace, Travel commitments, Financial/Economic stress, Difficulties in this town

b   Predictors: (Constant), Level of salary, Shift work, Difficulties in workplace, Travel commitments, Financial/Economic stress, Difficulties in this town, Relationship problems with partner, Relationship problems with family members, Emotional stress

c Dependent Variable: Currently living in

d Selecting only cases for which Been living here for >= 10-15 yrs