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המחלקה לכלכלה חקלאית ומנהל
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Economic Well-Being in
Rural Communities in Israel

by

Ayal Kimhi

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P.O. Box 12, Rehovot 76100

ת.ד. 12, רחובות 76100

Economic Well-Being in Rural Communities in Israel

by

Ayal Kimhi

Department of Agricultural Economics and Management

Faculty of Agriculture, The Hebrew University

P.O. Box 12, Rehovot 76100, ISRAEL

Tel: 972-8-9489376

Fax: 972-8-9466267

Kimhi@agri.huji.ac.il

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Abstract

This paper examines economic well-being across types of rural communities in Israel and over time, and identifies the determinants of well-being. While income per-capita of the rural population went down significantly between 1983 and 1995, there were improvements in housing density and automobile ownership. Well-being seems to be higher in communities in which the population is larger and more educated, and lower in more remote communities and those with more dependants.

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Introduction

This paper investigates the determinants of well-being of the rural population in Israel. As agriculture loses its importance as a source of income throughout the developed world, the rural population gradually shifts to alternative income sources (Freshwater, 2000). This is similar in a way to development processes in earlier times and in the developing countries these days, with the exception that development processes have been characterized by out-migration from rural areas, whereas in rural regions of developed countries migration sometimes goes the opposite way, with the influx of urban families seeking rural amenities (Rothwell et al., 2002; Mitchell, 2004). Understanding the way the rural system works and the way it interacts with its surrounding is a necessary condition for the design of appropriate rural policies (Apedaile, 1992).

In Israel, the deterioration of agricultural incomes in the last two decades has been perhaps more extreme than in other countries, as a result of a sharp decline in government support and protection (Kislev and Vaksin, 2003). Although there are specific regions in which agriculture is still prosperous, such as the Arava valley, our hypothesis is that on average, the rural population has suffered significant losses due to the reliance on agriculture. The main objective of this paper is to measure the changes in well-being of the rural population and investigate their determinants.

We use data on rural localities obtained from the two recent Censuses of Population in Israel, conducted in 1983 and 1995. The censuses were conducted at the household level, but we were only able to obtain locality-level data including the means of indicators of well-being and other properties of households and individuals in each locality. The main indicator of well-being in the data set is income per capita, but we also examine two alternative indicators, housing density (number of people per room) and the number of automobiles owned by the household. While there may be other measures of

well-being that are important in rural areas in particular, such as social capital (Shideler and Karybill, 2003), we can only use what is offered by our data set.

In the next section we provide historical background on the evolution of the rural sector in Israel. After that, we describe the data and present descriptive statistics, and then we move to the empirical analysis of rural well-being and its determinants. The final section discusses the implications of the results and suggests several avenues for future research.

Israeli Rural Localities in Perspective

Agriculture was one of the most important foundations on which the state of Israel was established. Since the end of the 19th century, Jewish settlers in Israel saw agriculture as a channel through which the link between the Jewish people and their ancient homeland can be re-established. Cooperation has been the key to the success of settlement and agricultural production. The two dominating types of cooperative settlements have been the Kibbutz and the Moshav (Kislev, 1992). The Kibbutz was a commune in which each member produced according to his ability and consumed according to his needs (Lecker and Shachmurove, 1999; Ingram and Simons, 2002). The Moshav was a cooperative village made of individual family farms, in which certain activities such as purchasing, marketing, and financing were handled jointly in order to exploit economies of scale in these activities (Haruvi and Kislev, 1984; Schwartz, 1999; Sofer, 2001). A third type of cooperative settlement, Moshav Shitufi, was a compromise between Kibbutz and Moshav: production was handled collectively while consumption was handled individually.¹ Ideologically, all three types of cooperative settlements explicitly highlighted farming as a way of life and not only as a way of making a living.

Economically, agriculture constituted a major fraction of national income and exports in particular for many years. Socially, the agricultural sector provided a generation of political, cultural and military leaders. After Israel declared its independence and masses of immigrants started pouring in, food security became one of the top priorities of the government. Many agricultural settlements were established in the early 1950s, mostly in remote areas, and populated by immigrants. The new settlers were provided with infrastructure and professional guidance in order to allow them to make a living off agriculture. Agricultural research was also promoted and financed by the government, and the resulting technological progress was remarkable.

In the 1970s, terms of trade of agriculture were already worsening, but the prosperity of agriculture continued thanks to the opening of export markets for fruits, vegetables and flowers. This has led to increased capital investments that were subsidized by the government.² However, the inevitable decline of farming, experienced by virtually all countries during the development process, was around the corner. The reliance on exports made farmers more vulnerable to world price fluctuations and macroeconomic conditions. The unstable economic environment brought about by the high inflation in the late 1970s and early 1980s made farm income even more uncertain. The large debt due to the capital investments could not be serviced adequately (Kislev, 1993). The development of non-agricultural manufacturing and service industries provided an alternative source of income, especially for the high-ability farmers. Out-migration from agriculture accelerated through two complementary channels. The first channel was by farmers selling their farms to urban families seeking rural-style residence (Kimhi and Bollman, 1999). The second channel was by continuing farmers who supplement their income by engaging in non-agricultural activities (Sofer, 2001; Kimhi, 2000). These included on-farm small

businesses as well as off-farm businesses and jobs, located in part in the surrounding rural area and in part in nearby urban centers.³

The farm debt crisis that followed the economy-wide 1985 stabilization plan was a major accelerator of this process. Many farms became practically delinquent due to the high real interest rates and could not serve as a source of income anymore. Many cooperatives collapsed, leaving their members without the safety net and support system that served them for decades (Kislev, Lerman and Zusman, 1991; Schwartz, 1999). Farmers were increasingly shifting to alternative income-generating activities, and while some of the more productive farms were able to acquire more farm resources and expand production, increasing fractions of land and other farm inputs were left unused.⁴

In the early 1990s, another structural change took place. With the mass migration wave from the former Soviet Union and the resulting shortage of housing, the government allowed farm communities to convert part of their agricultural land to non-agricultural uses, including both industrial parks and residential neighborhoods. This has also been viewed as a way to help farm families overcome the debt crisis. This policy provided farmers with more opportunities to develop non-agricultural businesses, and in addition allowed the localities to expand with the addition of many non-farm families that in some cases outnumbered the farm families. Both outcomes contributed to the accelerated decline in the importance of agriculture as a source of income in rural localities.⁵ Today, in most rural communities only a handful of families are living off agriculture.

Data and Descriptive Statistics

The data we use in this paper were obtained from the 1983 and 1995 Censuses of Population in Israel. We do not have observations on individuals or households, we only have village means of household and individual characteristics. The main welfare

indicator we use as a dependent variable is income per capita. We have both labor income and total income (including transfers) for 1995, but we chose to work with labor income because there are many more missing values in total income.⁶ For 1983, we only have wage labor income. However, we recognize that income is not the only possible measure of welfare. Other indicators of material well-being may be informative as well. Our data include two such indicators, housing density (average number of people per room) and the number of automobiles owned by the household. Housing density is reported in the form of two variables for each village in the sample: “low density” is the fraction of households with less than one person per room on average, and “intermediate density” is the fraction of households with 1-2 persons per room, on average. We use low density as an indicator of material well-being. The number of automobiles owned by households is also reported in the form of two variables: “one car or more”, which is the fraction of households that own at least one car, and “two cars or more”, the fraction of households that own more than one car. Here we choose two cars or more as an indicator of material well-being. While these choices are indeed arbitrary, we verified that their effect on the results is not qualitatively important by repeating the empirical analysis with “low or intermediate density” and “one car or more” as dependent variables.⁷

We divide the rural localities into four groups: Moshav, Kibbutz (including Moshav Shitufi), Jewish village and Arab village. As explained earlier, the Moshav and the Kibbutz are two types of cooperative villages. We separate the non-cooperative villages into Jewish and Arab because these villages differ substantially not only in their population characteristics but also in their history. While most Arab villages are old and evolved evolutionarily over the generations, most Jewish villages are planned communities that have been established in the last few decades, and many of them are governed by a cooperative society that handles the municipal issues. As a consequence of

history, there is more agriculture in Arab villages than in Jewish villages. We limit our sample to Jewish and Arab villages with population up to 2000 people, in order to make them comparable to the cooperative localities. This is also the way the Central Bureau of Statistics in Israel differentiates between rural and urban localities.

Figure 1 shows the distribution of the rural population among the different types of localities in the two census years. It is noticeable that the number of Kibbutz and Moshav villages did not change much between 1983 and 1995, and their share in the rural population dropped slightly. The number of private Jewish villages increased by 40%, and they almost doubled their share in the rural population. The number of private Arab villages dropped by a third, and their share in the rural population went down. Most of the changes in the number of localities are due to the establishment of new Jewish communities and to the expansion of many Arab villages over and above the 2000 population threshold.

We now turn to compare economic well-being in the different types of rural localities. Note that we do not have a complete measure of per-capita income in Kibbutz localities. This is because the joint income of the collective, which was still substantial in many cases, was not reported in the Census of Population. Car ownership in the Kibbutz is also a questionable indicator of well-being, due to the fact that in many cases Kibbutz members could use vehicles owned by the collective for their private needs, and again, these vehicles were not counted in the Census. Even with housing density we have a problem concerning Kibbutz villages, since in 1983 there was very little variation in the levels of housing density across Kibbutz villages. Therefore, we decided to drop the Kibbutz villages from the empirical analysis.

Figure 2 examines income per capita. Panel A compares wage labor income, which is the only income measure available for 1983, in 1983 and 1995. We observe a sharp drop

in income across all three types of villages, which we believe is artificial and we still have to figure out why we obtain this result. However, we observe that wage labor income per capita is much lower in the Arab rural population than in the Jewish rural population in both periods. Panel B compares the different definitions of income in 1995. We find that the inferiority of the Arab population is independent of the income definition used, while the difference between Moshav villages and private Jewish localities does depend on the definition. In any case, the difference between these two types of Jewish communities is not large.

Figure 3 compares housing density across types of villages and over time. Overall, housing conditions have improved in all types of villages between 1983 and 1995. Similarly to the income situation, we find that the Arab population is worse off in terms of housing density, and there is no significant difference between Moshav Villages and private Jewish localities. Similar conclusions are obtained with regard to car ownership (figure 4). We conclude that Arab localities are worse off in all three dimensions of well-being, and that this situation does not seem to change over time.

Figure 5 shows the bivariate correlation coefficients of the three measures of well-being. While we find that all the correlation coefficients are positive and most of them statistically significant in Moshav villages and in private Jewish localities, the situation in Arab villages is not that simple. On the whole, there is merit to examining all three measures of well-being because they seem to represent different aspects of well-being in the different types of localities. Perhaps part of the explanation is the complex interactions between the different measures. Both housing density and car ownership are positively enhanced by income. However, housing density could vary geographically because of variations in real-estate prices, and car ownership could respond to employment status through the use of a vehicle as an input in production rather than as a consumption good.

We explain variations in the three measures of economic well-being with variations in demographic, economic, geographic and institutional characteristics of the localities, by means of three multivariate linear regressions. Demographic characteristics include village population,⁸ mean household size, median age of the population, and dependency ratio (one minus the fraction of people from 20 to 64 years of age). We also include the fraction of people from 26 to 50 years of age with 9-12 years of schooling, with more than 12 years of schooling, and with an academic degree.⁹ Economic characteristics include the labor force participation rate, the fraction of people employed in prestigious (academic and managerial) occupations, and the fraction of households headed by an employee. Geographic characteristics are represented by a set of regional dummies, according to the regions defined by the Ministry of Agriculture (figure 6). Since these regions are defined according to both agricultural and geographical attributes, we also include the distance from Tel Aviv as an explanatory variable.¹⁰ This gives us a partial control for geographic location within regions. Institutional characteristics include year of establishment and a set of dummies for affiliations in settlement movements.¹¹

The means of the explanatory variables are reported in table 1. In terms of population, the private localities, and especially the Arab localities, are much larger than the Moshav villages. This is due to the fact that private localities are not subject to institutional constraints on residential housing other than zoning laws, as opposed to Moshav villages which are subject to a much stricter planning control. Households are largest and median age is lowest in Arab localities. The dependency ratio is highest in Arab localities and lowest in Moshav villages. Education is highest in private Jewish localities, and lowest in Arab villages, and the same is true for prestigious jobs. Labor force participation is lowest in Arab localities, but more of the Arab heads of households are hired employees.

Between 1983 and 1995, there was an increase in population in Moshav villages and in private Jewish localities, but not in Arab localities. This is because Arab localities dropped out of the list of rural localities simply by crossing the 2000 inhabitant threshold. Household size dropped in Moshav villages and in Arab localities, but not in private Jewish localities. This is because many of the private Jewish localities that were established between 1983 and 1995 are inhabited by religious people who tend to have larger families. Educational attainment increased in all localities, but in Arab localities the increase was mostly in high school education, while in Moshav villages and private Jewish localities the increase was more pronounced in higher education and academic degrees.

The regional distribution of the rural population shows that most of the population in Moshav villages and private Jewish localities are located in the center, while the rural Arab population is concentrated in the three northern regions. The distance to Tel Aviv reflects this regional distribution as well. We have year of establishment for Jewish localities only, and we find that Moshav villages had the same establishment year on average as private Jewish localities in 1983. By 1995, however, many new private Jewish localities were established and changed the picture. Regarding affiliation in settlement movements, which is only relevant for Moshav villages, we note that there is one dominant movement and several smaller movements.

Results

Table 2 provides bivariate correlation coefficients between the dependent variables and the explanatory variables. We first note that income per capita is significantly correlated with all but a few of the explanatory variables, while there are more insignificant correlations in the case of housing density and automobile ownership. In private Jewish localities and Moshav villages, most of the statistically significant

correlations are consistent in sign across the three measures of well-being. In particular, village population, median age, higher education, academic degrees, labor force participation and the fraction of prestigious jobs are mostly positively correlated with well-being. On the other hand, household size, dependency ratio, high school education, the fraction of hired employees, distance to Tel-Aviv and year of establishment are mostly negatively correlated with well-being. In private Arab localities, the correlations have similar signs in most cases, but there are more exceptions.

Tables 3-5 include the regression results for per capita income, housing density and automobile ownership, respectively. Each regression is estimated four times: for 1983, for 1995, for the pooled 1983-1995 sample, and for the panel of localities observed in both 1983 and 1995. The first two regressions allow different coefficients in 1983 and 1995, while in the last two regressions the coefficients are the same except for the intercept. The panel regression is using differenced variables in order to control for fixed effects. We estimate the regressions separately for each type of locality.¹²

In table 3 we observe that income per capita declined in all types of localities between 1983 and 1995, even after controlling for observables and fixed effects. The order of magnitude is from 52% in private Jewish localities to 70% in Moshav villages. The only other result that is consistent across types of localities is the positive effect of the level of education. Since the level of education increased between 1983 and 1995, this helps to reduce the autonomous decline in income per capita during the period. Among the demographic variables, median age has a negative effect on income per capita in private Jewish localities while the dependency ratio has a negative effect in Arab localities and Moshav villages. The fraction of prestigious jobs has a positive effect in Moshav villages and a negative effect in Arab localities. Location seems to be important in private Jewish localities, where income per capita is higher in the East Valleys and Arava and in Yizre'el

valley and Lower Galilee than in other parts of the country. Year of establishment has a negative effect in Moshav villages, meaning that income per capita is higher in more veteran villages.

In table 4 we observe that housing density improved between 1983 and 1995 in private Jewish localities and Moshav villages, holding other things constant, but not in the Arab localities.¹³ Household size is bad for housing density, but after controlling for fixed effects the effect becomes weaker in private Jewish localities and vanishes in Arab localities. Village population is good for housing density in Arab localities, while median age is good for housing density in private Jewish localities. Education is bad for housing density in private Jewish localities, but academic degrees are good, both in private Jewish and in Arab localities. The fraction of hired employees is also good for housing density in private Jewish and Arab localities. In private Jewish localities, housing density is somewhat worse in the Golan and East Galilee and in Yizre'el valley and Lower Galilee than in other parts of the country. Housing density improves when the distance to Tel Aviv is smaller, but the effect is significant only in Moshav villages. Housing density is also better in Moshav villages that were established earlier.

Automobile ownership improved between 1983 and 1995 in all types of rural localities (table 5). However, the effect becomes insignificant in private Jewish localities in the panel regression, meaning that much of the increase was due to communities that were established after 1983. There are not many significant coefficients after controlling for fixed effects. Village population has a positive effect on automobile ownership in private Jewish localities and in Moshav villages, while median age, the dependency ratio and labor force participation have negative effects in Moshav villages only. Prestigious jobs has a positive effect and the fraction of hired employees has a negative effect in private Jewish localities. Automobile ownership is higher in private Jewish localities

located in the West Galilee and in Arab localities located in the south, and lower in Moshav villages located in Yizre'el valley and Lower Galilee and in the Eastern Valleys and Arava, than in other parts of the country. Distance to Tel Aviv has a negative effect on automobile ownership in all three types of rural localities. Automobile ownership is higher in Moshav villages that were established earlier.

Looking across the measures of well-being, several consistent patterns can be identified. Education has positive effects on well-being, whenever significant, with one exception. Village population seems to be good for well-being while the dependency ration and the distance to Tel-Aviv seem to be bad. Well-being is consistently better in more veteran as opposed to younger Moshav villages.

Discussion

We have examined rural well-being across types of localities in Israel and over time, and tried to identify correlates of well-being. While income per-capita of the rural population went down significantly between 1983 and 1995, there were improvements in housing density and automobile ownership. These seem to be contradictory results – how can one evaluate well-being if different measures evolve in opposite directions?

However, there is an alternative interpretation of these results. While income is determined to a large extent by market forces, housing density and automobile ownership are household decisions. In particular, they are determined by income and prices. Hence, the regressions we estimate are in fact reduced-form equations. One could say that housing density and automobile ownership improved over time despite the fact that income per capita went down. It would be interesting to inspect what happened to prices of housing and automobiles between 1983 and 1995. It may also be possible to estimate structural

equations in which housing density and automobile ownership are explicit functions of income. These issues are left for future research.

Another result that is worth further examination is the negative effect of distance to Tel Aviv on automobile ownership. This implies that the further you are from the center, holding everything else constant, and noting that income per capita does not vary significantly with the distance, the less you have to rely on transportation. Perhaps what we have to look at is regional and local labor markets, and the economic integration between the rural population as defined here (residents of localities with up to 2000 inhabitants) and larger localities that are not too far. This calls into question the definition of rurality, and definitely deserves further examination.

Notes

¹ Since a relatively small number of Moshav Shitufi settlements exist, we group them together with Kibbutz.

² Export crops were mostly grown by Moshav farmers, because at that time the Kibbutz still refrained from using hired labor in agriculture, which is essential for these crops. This is why the Kibbutz has gone into alternative income-generation activities, mostly industry, earlier than the Moshav.

³ One should bear in mind that the concept of rural in a small country such as Israel is relative. Most rural residents live within a couple of hours drive from a major urban center. In addition, “development towns” were established in rural areas during the immigration wave of the 1950s, in order to provide hired labor to the farm communities. By the 1980, some of these towns (but not all) were prosperous enough to provide jobs for exiting farmers.

⁴ Legally farmers were not allowed to trade land and water quotas. This regulation was more or less self-enforced by the cooperatives, but after their collapse, and given the financial hardships of the farmers, it became common to lease land and water, mostly on a short-term basis.

⁵ Another outcome of the housing shortage was a boom in real estate prices. This allowed and still allows farmers in the central part of the country to sell off their farm to wealthy urban families who seek a rural residence and do not have any interest in farming.

⁶ To make sure we don’t miss anything important, we repeated the empirical analysis with total income. The results were qualitatively similar.

⁷ The census was administered using two different questionnaires. The “short” questionnaire, which included basic demographic and household characteristics, was filled out by all households. The “long” questionnaire, which included more detailed work and income questions, was filled out by 20% of the households, chosen randomly. The housing density and car ownership variables are from the short questionnaire, while income is from the long questionnaire. We inflated the income variable by the inverse of the fraction of workers who reported their income, assuming implicitly that those who did not report their income are a random sample of workers.

⁸ Smailes et al. (2002) have shown that rural population density affected several socio-economic outcomes in Australia.

⁹ McGranahan and Kassel (1997) showed that education is closely associated with rural growth. However, Arts (2003) claimed that education can affect rural well-being positively through the accumulation of human capital and negatively due to selective out-migration.

¹⁰ Ehrensaft and Beeman (1992) showed that distance from a metropolitan center accounts for much of the differences between rural communities. Bollman (1999) found that in Canada, communities influenced by metropolitan centers benefited relative to other communities during the 1980s

¹¹ Affiliation with a settlement movement is relevant only for Moshav villages. Historically, the settlement movements were ideologically differentiated, and this may have had long-lasting consequences for well-being. Year of establishment is not available for Arab localities.

¹² In the separate regressions we do not use the same income measure for 1983 and 1995: for 1983 we use wage labor income while for 1995 we use total labor income. In the pooled and panel regressions we use wage labor income in both years. 1983 income is in 1995 prices.

¹³ Note that what we call density is in fact the opposite of density, so that a positive coefficient indicates lower density, but we will use a conventional terminology meaning that a positive effect on housing density is good for well-being.

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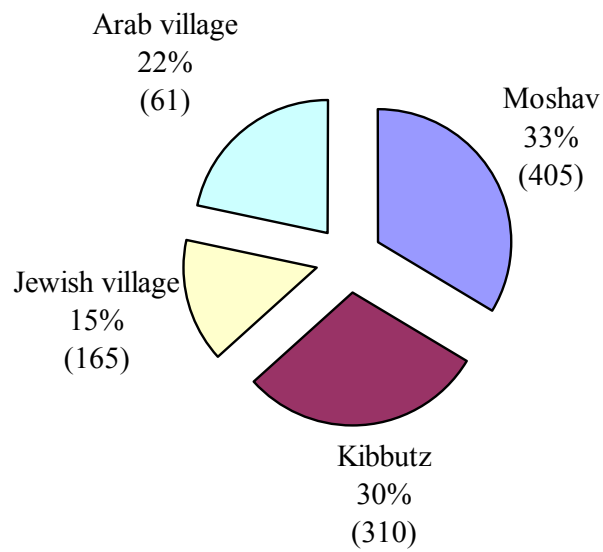
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1983



1995

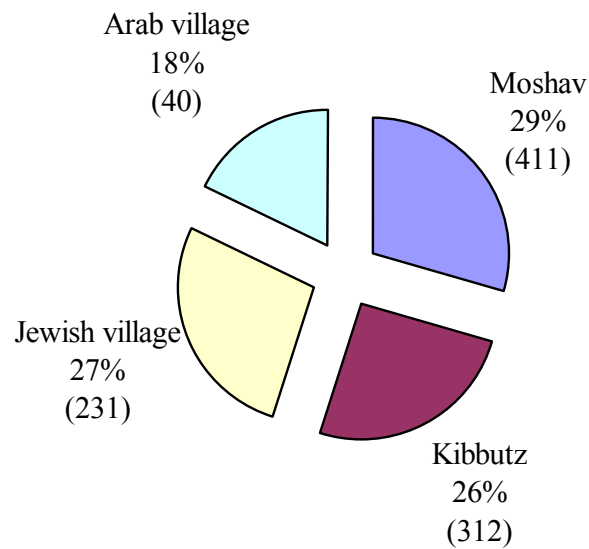
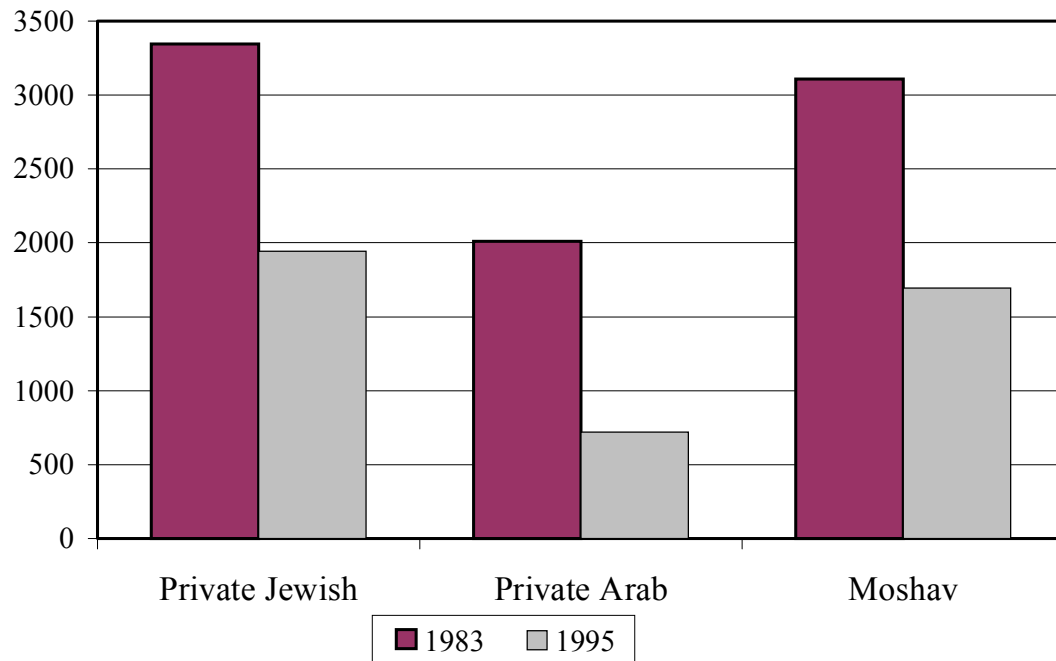


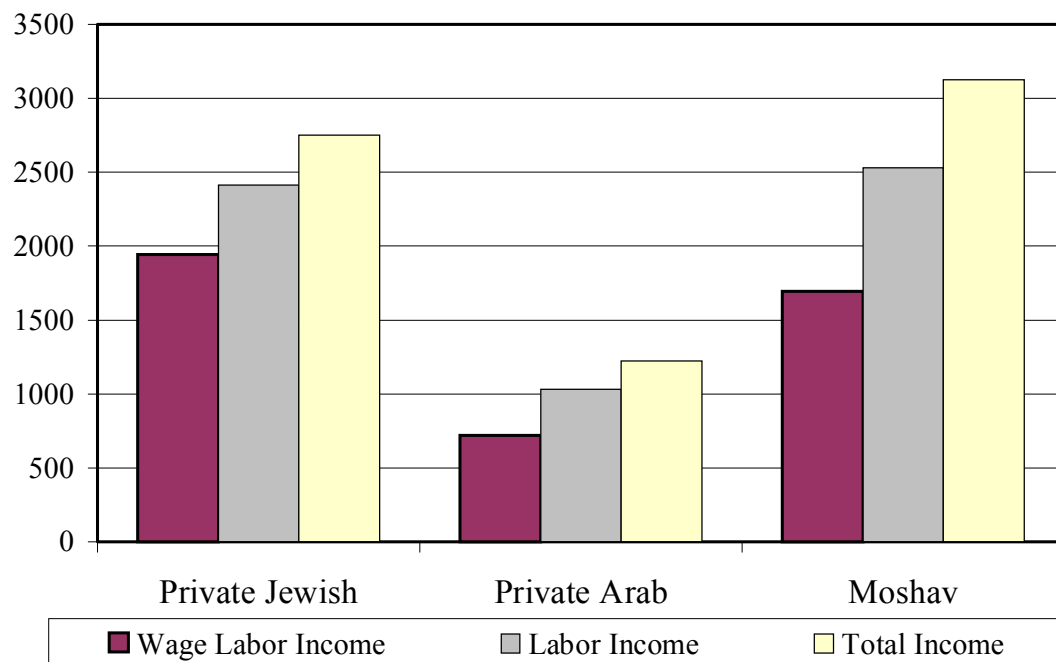
Figure 1. The distribution of the rural population across types of villages

Note: Number of villages in parentheses.

Sources: Statistical Abstract of Israel, 1983 (table II/10) and 1995 (table 2.11)



A. Wage labor income, 1995 vs. 1983



B. Different income measures, 1995

Figure 2. Mean monthly income per capita, NIS, 1995 prices

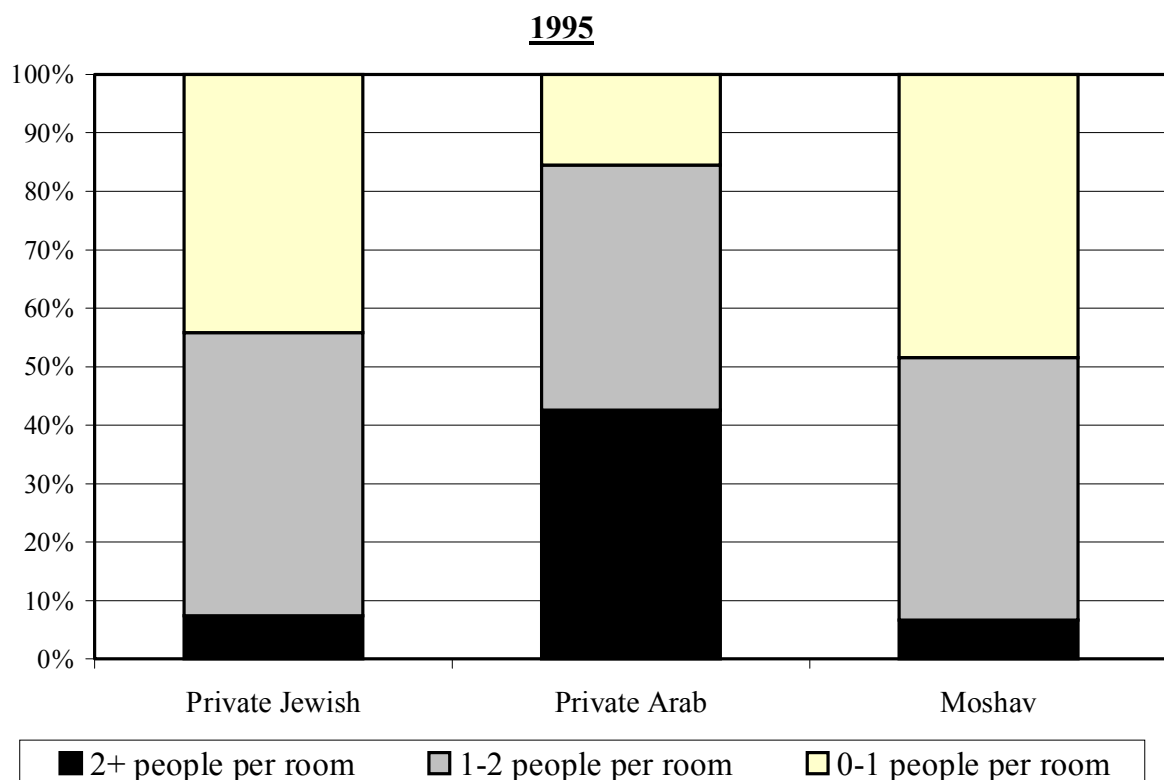
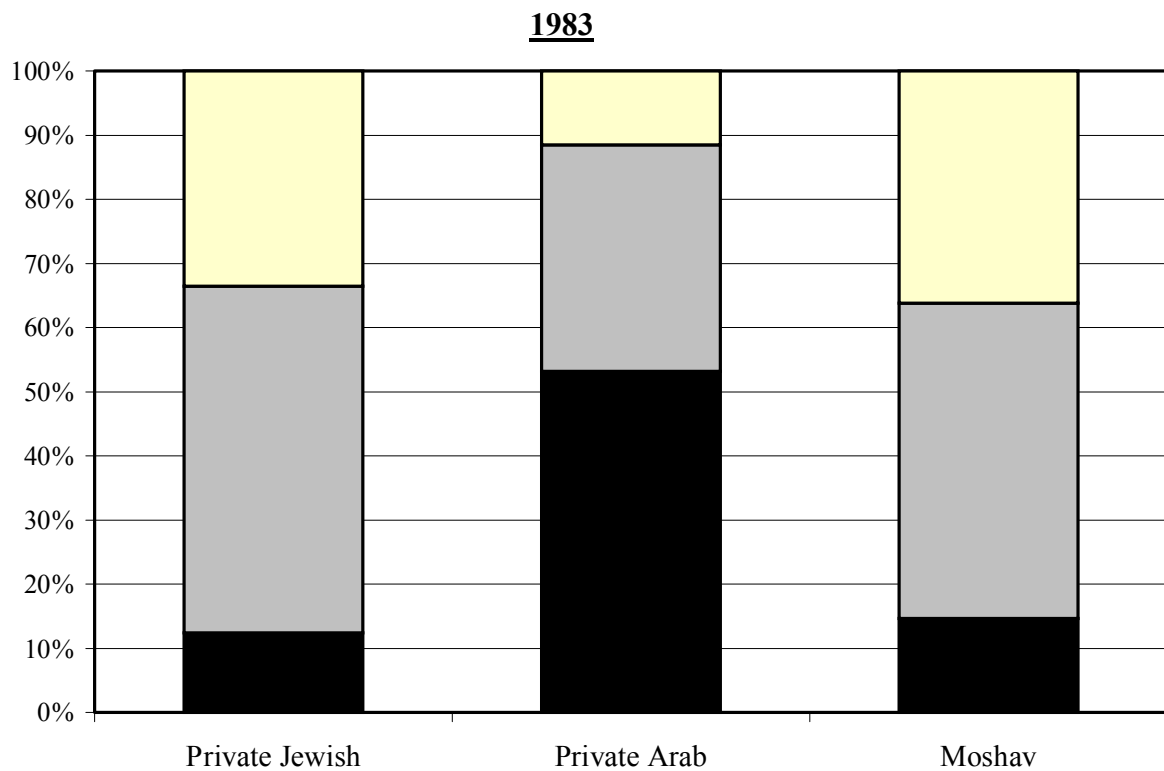


Figure 3. Fraction of households by housing density

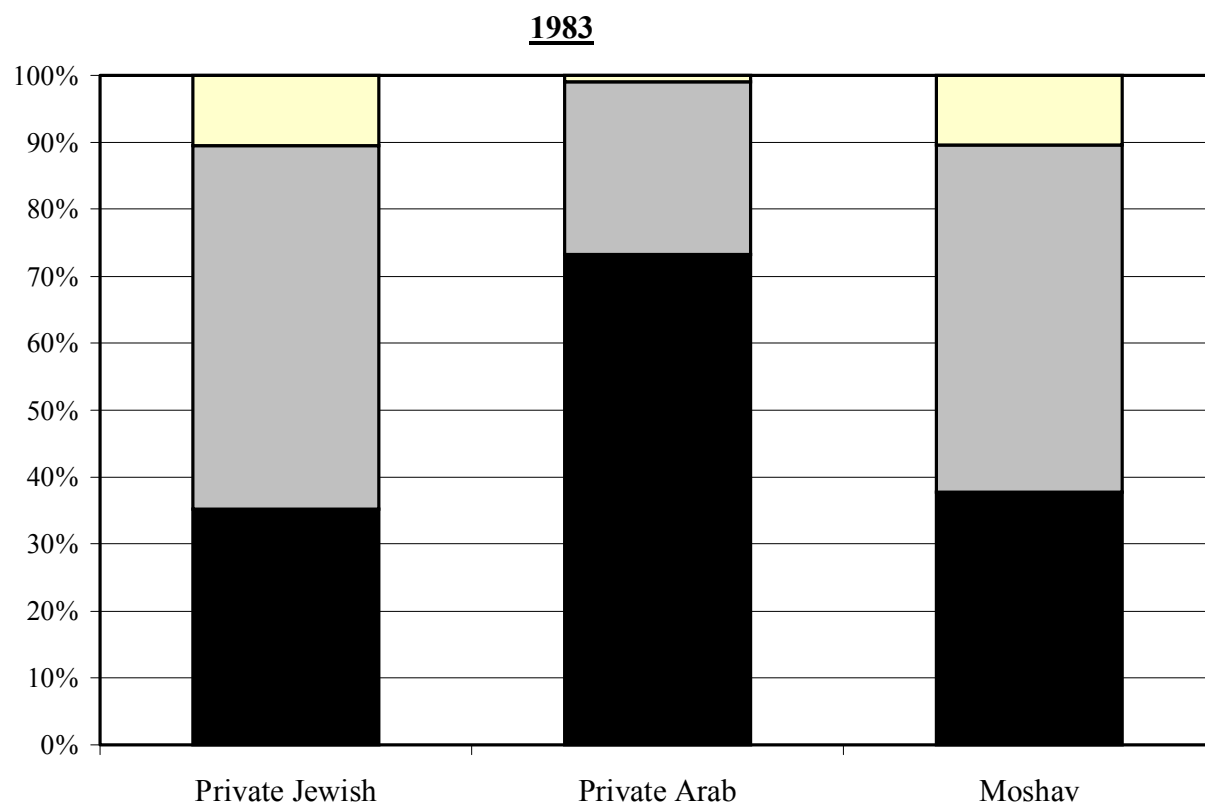


Figure 4. Fraction of households by car ownership

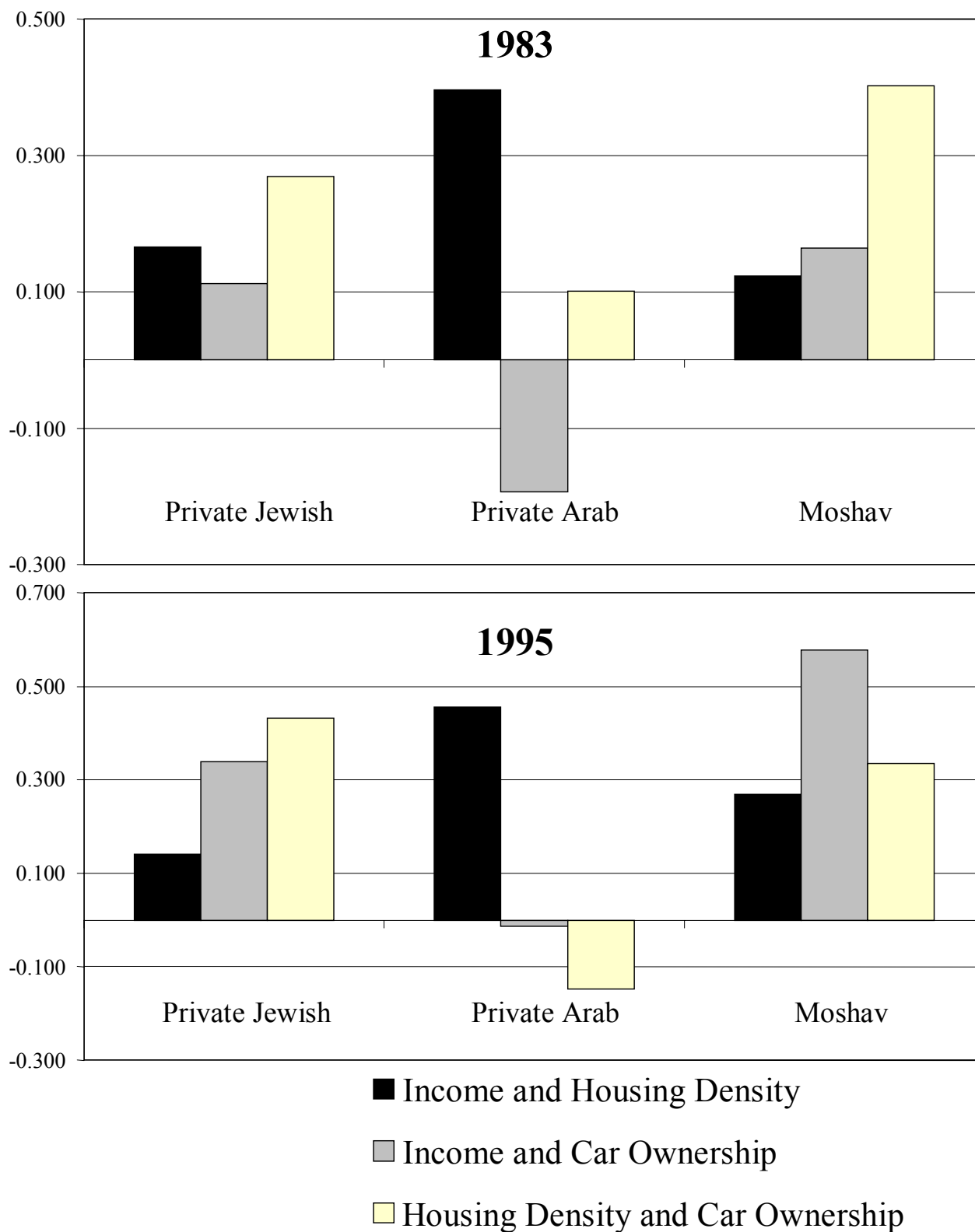


Figure 5. Correlations of the three measures of well-being

Note: In 1983, the correlation between income and housing density was not significant in Arab localities. In 1995, the correlation between housing density and car ownership was not significant in Moshav villages and in private Jewish localities.

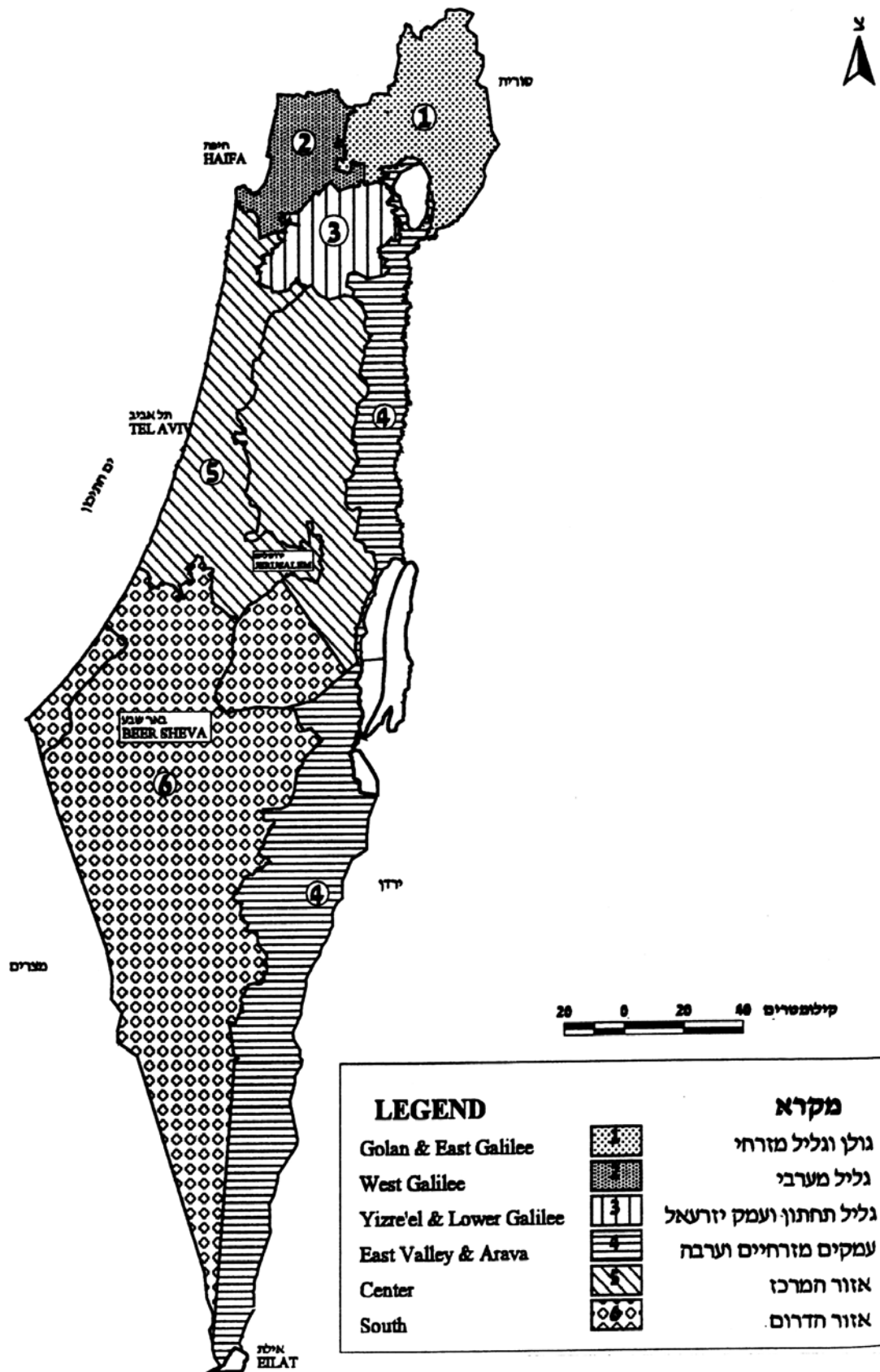


Figure 6. Geographical regions

Table 1. Means of Explanatory Variables

		Private Jewish		Private Arab		Moshav	
Variable	Units	1983	1995	1983	1995	1983	1995
<u>Demographic variables</u>							
Population	People	774.94	909.39	1263.35	1222.53	419.41	488.65
Household size	People	3.87	3.89	5.64	4.89	4.05	3.46
Median age	Years	22.56	21.85	16.02	17.82	25.20	27.79
Dependency ratio	Ratio	1.09	1.04	1.67	1.26	0.99	0.87
High school	Percent	40.67	38.13	16.17	36.70	47.48	52.61
Higher education	Percent	45.45	55.62	8.01	11.75	28.56	38.74
Academic degree	Percent	19.11	31.89	3.36	5.18	9.68	17.49
Labor participation	Percent	69.70	73.65	41.55	40.55	63.36	68.96
Prestigious job	Percent	18.48	23.95	2.57	3.58	8.52	13.50
Hired employees	Percent	77.06	79.26	86.02	81.90	51.91	61.63
<u>Geographic variables</u>							
Golan & East Galilee	Percent	18.44	6.10	16.38	16.59	7.86	3.44
West Galilee	Percent	2.90	6.90	20.97	16.34	5.68	4.97
Yizre'el & Lower Galilee	Percent	8.80	10.70	24.42	28.25	7.07	7.07
East Valleys & Arava	Percent	8.85	6.20	9.10	15.44	4.03	4.81
Center	Percent	55.94	59.20	26.37	19.99	51.45	56.44
South	Percent	5.06	11.00	2.76	3.40	23.91	23.27
Distance to TLV	km	63.62	63.69	88.37	83.51	54.41	55.27
<u>Institutional variables</u>							
Year of establishment	Year	1948	1964			1948	1949
Tnu'at Hamoshavim	Percent					62.34	64.21
Hapo'el Hamizrachi	Percent					16.15	14.40
Ha'ichud Hachakla'i	Percent					10.98	11.11
Other	Percent					10.53	10.28
Number of localities	number	132	213	48	38	406	411

Note: the means are weighted by number of households in each locality.

Table 2. Correlations between Dependent Variables and Explanatory Variables

	<u>Private Jewish Localities</u>			<u>Private Arab Localities</u>			<u>Moshav Villages</u>		
1983	Income	Housing	Autos	Income	Housing	Autos	Income	Housing	Autos
Population	0.162**	0.296**	-0.009**	0.014**	0.138**	0.130**	0.007**	0.101**	0.023**
Household size	-0.220**	-0.435**	-0.198**	-0.622**	-0.549**	0.201**	-0.154**	-0.639**	-0.255**
Median age	0.162 *	0.443**	0.116**	0.564**	0.236**	-0.032**	0.090**	0.663**	0.153**
Dependency ratio	0.016**	-0.066**	-0.137**	-0.495**	-0.346**	0.146**	-0.028**	-0.316**	0.015**
High school	-0.232**	-0.067	-0.030**	0.412**	0.135**	-0.111**	0.058**	-0.024	-0.067**
Higher education	0.390**	-0.019**	0.082**	0.380	0.125	-0.181**	0.189 *	0.362**	0.480**
Academic degree	0.338**	0.044	0.135**	0.125**	0.161**	-0.033**	0.195**	0.264**	0.357
Labor participation	0.181**	-0.044**	0.157	0.368**	0.210 *	0.062**	0.118**	0.151**	0.248**
Prestigious job	0.435**	0.089**	0.162	0.622	0.241 *	-0.066**	0.240**	0.272**	0.433**
Hired employees	0.129**	-0.040	0.022**	0.071**	0.098**	-0.345**	-0.042	-0.082**	-0.131**
Distance to TLV	-0.137**	-0.101**	-0.156**	0.014**	-0.128**	-0.045**	-0.080**	-0.284**	-0.299**
Year of establishment	0.038**	-0.299	0.071**				-0.005**	-0.419**	-0.159 *
1995	Income	Housing	Autos	Income	Housing	Autos	Income	Housing	Autos
Population	0.012**	0.230**	0.100**	-0.323**	-0.432**	0.135**	0.047**	0.121**	0.072**
Household size	-0.002**	-0.548**	-0.078**	-0.421**	-0.669**	0.214**	-0.244**	-0.651**	-0.173**
Median age	0.069**	0.496**	0.215**	0.414**	0.346**	0.097	0.130**	0.592**	0.066**
Dependency ratio	-0.046**	-0.456**	-0.314**	-0.390**	-0.329**	-0.083**	-0.198**	-0.205**	-0.116**
High school	-0.110**	-0.087	-0.144	-0.041**	-0.094	0.189**	-0.384**	-0.303	-0.484
Higher education	0.163**	0.135*	0.265	0.692**	0.507	0.085**	0.470**	0.417**	0.617**
Academic degree	0.162**	0.131	0.266	0.799**	0.575	-0.152**	0.501**	0.384**	0.609**
Labor participation	0.205**	0.055**	0.228**	-0.024**	-0.078	0.460**	0.426**	0.231**	0.431**
Prestigious job	0.089**	0.278	0.401*	-0.148**	-0.197**	0.174	0.392**	0.335**	0.521**
Hired employees	-0.404**	0.099*	-0.103	-0.449**	-0.342**	0.144**	-0.085**	0.010	-0.078*
Distance to TLV	0.226**	-0.167**	-0.079**	0.123**	-0.094**	-0.249**	-0.107**	-0.305**	-0.172**
Year of establishment	-0.096**	-0.314	-0.167				-0.048**	-0.356**	0.021**

* coefficient significant at 5%; ** coefficient significant at 1%

Table 3. Regression Results: Income Per Capita

Variable	Private Jewish Localities				Private Arab Localities				Moshav Villages			
	1983	1995	pooled	panel	1983	1995	pooled	panel	1983	1995	pooled	panel
Intercept	1.66** (2.64)	0.14 (0.15)	1.55* (2.54)		2.36** (3.31)	-2.62 (-0.71)	-3.46 (-1.99)		3.49** (8.35)	-1.03* (-2.10)	0.84** (2.94)	
Population	0.07 (1.12)	0.04 (0.67)	-0.17** (-3.30)	0.08 (0.67)	0.10 (1.26)	-0.49 (-1.43)	0.13 (0.73)	-0.52* (-2.68)	0.03 (0.58)	0.12* (2.25)	0.02 (0.69)	0.07 (0.74)
Household size	-0.05 (-1.04)	0.18** (3.06)	-0.07 (-1.40)	-0.14 (-1.49)	-0.10* (-2.08)	0.65 (1.86)	0.43** (3.02)	-0.08 (-1.39)	-0.03 (-0.66)	0.05 (1.36)	0.01 (0.29)	0.01 (0.18)
Median age	0.01 (1.60)	0.00 (0.28)	0.00 (0.16)	-0.04** (-3.94)	0.02 (0.48)	-0.06 (-0.38)	-0.08 (-1.09)	0.08* (2.59)	-0.01 (-1.10)	-0.00 (-1.14)	-0.01 (-1.77)	-0.00 (-0.25)
Dependency ratio	0.67** (5.31)	-0.58** (-4.19)	0.66** (5.62)	0.09 (0.35)	-0.07 (-0.18)	-2.91 (-1.09)	-2.62** (-2.93)	1.04* (2.35)	-0.10 (-1.05)	-0.30** (-4.47)	-0.20** (-3.49)	-0.19* (-2.49)
High school	0.01** (5.08)	-0.01* (-2.57)	0.01* (2.50)	0.02** (5.96)	-0.00 (-0.59)	0.03* (2.18)	0.02** (2.79)	-0.00 (-1.79)	0.00** (3.18)	0.00 (1.89)	0.00** (3.71)	-0.00 (-0.89)
Higher education	0.01** (5.06)	-0.01* (-2.43)	0.01** (2.89)	0.02** (5.43)	0.01 (0.64)	0.02 (0.33)	0.04 (1.87)	0.02* (2.15)	0.01** (2.90)	0.01* (2.48)	0.00** (3.68)	0.00 (0.95)
Academic degree	0.00 (0.08)	-0.00 (-0.83)	-0.00 (-0.91)	-0.01 (-1.47)	-0.00 (-0.28)	0.01 (0.30)	0.04 (1.50)	0.00 (0.09)	-0.00 (-0.85)	0.01** (3.27)	0.00 (0.37)	-0.00 (-0.69)
Labor participation	-0.00 (-1.13)	0.02** (4.95)	0.00 (0.24)	0.00 (0.10)	-0.01 (-1.71)	0.05 (2.06)	0.00 (0.45)	-0.00 (-0.46)	-0.00 (-1.51)	0.01** (5.27)	0.00 (0.52)	-0.00 (-0.78)
Prestigious job	0.00 (1.12)	0.01* (2.32)	0.01 (1.76)	0.00 (0.91)	0.03** (3.13)	0.03 (0.74)	-0.02 (-0.73)	-0.02* (-2.40)	0.02** (5.45)	0.00* (2.35)	0.02** (10.06)	0.01** (5.68)
Hired employees	0.00** (2.99)	-0.01** (-4.95)	-0.00 (-0.51)	-0.00 (-0.26)	0.01 (1.67)	-0.01 (-0.46)	0.02* (2.52)	0.00 (0.22)	-0.00 (-0.62)	-0.00** (-2.73)	0.00 (1.24)	-0.00 (-0.12)

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Table 3. (continued)

Variable	Private Jewish Localities				Private Arab Localities				Moshav Villages			
	1983	1995	pooled	panel	1983	1995	pooled	panel	1983	1995	pooled	panel
Golan & East Galilee	0.71*	-0.59*	-0.16		0.35	-0.26	0.62		0.14	0.01	0.07	
	(2.14)	(-2.01)	(-0.60)		(1.10)	(-0.28)	(0.94)		(1.11)	(0.08)	(0.91)	
West Galilee	0.76**	-0.27	-0.03		0.08	-0.44	0.58		0.04	0.02	-0.00	
	(3.17)	(-1.31)	(-0.19)		(0.43)	(-0.49)	(1.22)		(0.30)	(0.19)	(-0.01)	
Yizre'el & Lower Galilee	0.95**	-0.10	0.36*		0.20	-0.38	0.32		-0.16	-0.07	-0.15*	
	(5.05)	(-0.63)	(2.48)		(1.11)	(-0.50)	(0.81)		(-1.51)	(-0.89)	(-2.21)	
East Valleys & Arava	1.36**	0.07	0.75**		0.13	-0.09	0.04		0.19	-0.04	0.11	
	(3.80)	(0.22)	(2.62)		(0.63)	(-0.11)	(0.09)		(1.95)	(-0.58)	(1.84)	
South	0.58**	-0.54**	-0.46**		0.15	1.58	1.28		0.02	0.03	0.02	
	(3.43)	(-3.53)	(-3.29)		(0.39)	(1.09)	(1.30)		(0.26)	(0.48)	(0.45)	
Distance to TLV	-0.01**	0.00**	-0.00		-0.00	0.02	0.01		-0.00	-0.00	-0.00*	
	(-3.50)	(2.85)	(-0.26)		(-0.84)	(1.65)	(0.76)		(-1.46)	(-0.32)	(-2.58)	
Year of establishment	0.01	-0.00	-0.00						-0.01*	-0.00	-0.01**	
	(1.43)	(-0.21)	(-0.90)						(-2.21)	(-0.37)	(-3.72)	
1995 dummy			-0.25*	-0.52**			-1.90**	-0.65**			-0.77**	-0.70**
			(-2.50)	(-3.21)			(-6.54)	(-4.95)			(-21.81)	(-13.95)
R squared (%)	54.87	41.64	26.10	42.38	71.65	79.15	65.24	91.70	24.95	47.45	50.45	12.51
F statistic	8.15**	8.02**	6.32**	7.80**	4.90**	4.74**	7.51**	26.51**	6.38**	17.60**	38.49**	5.56**
Number of cases	131	208	340	116	47	36	85	34	404	410	815	399

Notes: t-ratios in parentheses; * significant at 5%; ** significant at 1%; coefficients of institutional affiliation dummies included but not shown for Moshav villages.

Table 4. Regression Results: Housing Density

Variable	Private Jewish Localities				Private Arab Localities				Moshav Villages			
	1983	1995	pooled	panel	1983	1995	pooled	panel	1983	1995	pooled	panel
Intercept	12.01 (0.47)	33.45 (1.45)	35.96* (2.50)		3.87 (0.18)	122.51** (4.60)	46.76** (3.28)		157.54** (12.57)	89.95** (5.37)	135.72** (14.77)	
Population	8.19** (3.30)	4.30** (2.94)	9.35** (7.84)	6.13 (1.85)	1.88 (0.78)	5.22* (2.09)	-1.42 (-1.01)	11.81* (2.13)	-3.29* (-2.05)	-2.70 (-1.52)	-2.98** (-2.67)	3.48 (1.10)
Household size	-2.41 (-1.13)	-9.32** (-6.81)	-6.65** (-5.82)	-5.65* (-2.09)	-0.48 (-0.33)	-9.99** (-3.95)	-4.63** (-3.96)	-0.20 (-0.12)	-13.09** (-8.47)	-14.12** (-11.17)	-13.19** (-13.50)	-10.69** (-8.15)
Median age	0.68* (2.41)	0.77** (3.87)	0.39** (2.76)	0.62* (2.29)	-0.13 (-0.12)	-2.40 (-2.05)	0.73 (1.20)	-0.77 (-0.87)	-0.12 (-0.70)	0.80** (5.67)	0.24* (2.20)	0.21 (1.27)
Dependency ratio	-7.24 (-1.41)	5.59 (1.72)	-5.46* (-1.99)	-1.93 (-0.26)	-19.73 (-1.84)	-44.70* (-2.31)	-4.64 (-0.64)	-23.14 (-1.83)	-1.32 (-0.47)	6.33** (2.79)	3.51 (1.92)	3.14 (1.29)
High school	-0.48** (-5.84)	0.11 (0.85)	-0.31** (-5.32)	-0.45** (-4.85)	-0.07 (-0.71)	-0.35** (-3.64)	-0.22** (-3.83)	-0.14* (-2.08)	-0.08 (-1.71)	0.13 (1.89)	-0.10** (-2.66)	-0.08 (-1.63)
Higher education	-0.52** (-6.08)	0.04 (0.29)	-0.47** (-7.01)	-0.65** (-5.08)	-0.21 (-0.88)	0.31 (0.93)	-0.35 (-1.81)	-0.07 (-0.28)	0.19** (3.27)	0.24** (3.32)	0.16** (3.68)	0.02 (0.28)
Academic degree	0.04 (0.30)	0.06 (0.58)	0.09 (1.09)	0.33* (2.14)	0.32 (0.78)	-0.40 (-1.21)	0.64** (3.00)	0.76* (2.64)	-0.31** (-3.76)	-0.07 (-0.89)	-0.29** (-5.06)	0.06 (0.68)
Labor participation	0.12 (1.10)	0.23** (2.84)	0.21** (2.97)	0.17 (1.46)	0.05 (0.46)	-0.17 (-1.07)	-0.03 (-0.31)	-0.09 (-0.80)	-0.17** (-2.88)	-0.09 (-1.45)	-0.14** (-3.26)	-0.11 (-1.72)
Prestigious job	0.05 (0.37)	0.26** (3.55)	0.18* (2.55)	0.19 (1.30)	-0.10 (-0.40)	-0.99** (-2.98)	-0.23 (-1.25)	-0.37 (-1.64)	0.28** (2.98)	0.18** (3.03)	0.28** (5.48)	0.11 (1.49)
Hired employees	-0.04 (-0.66)	-0.08 (-1.68)	-0.08* (-2.19)	0.21** (3.77)	0.15 (1.31)	-0.26 (-1.62)	0.02 (0.35)	0.19* (2.12)	-0.06* (-1.99)	-0.06 (-1.74)	-0.08** (-3.77)	-0.02 (-0.66)

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Table 4. (continued)

Variable	Private Jewish Localities				Private Arab Localities				Moshav Villages			
	1983	1995	pooled	panel	1983	1995	pooled	panel	1983	1995	pooled	panel
Golan & East Galilee	-45.67** (-3.39)	5.51 (0.80)	-13.48* (-2.19)		-3.66 (-0.39)	-10.57 (-1.56)	1.33 (0.34)		-3.52 (-0.95)	5.71 (1.92)	0.33 (0.14)	
West Galilee	-32.87** (-3.40)	9.09 (1.86)	-0.11 (-0.03)		2.48 (0.44)	-8.49 (-1.29)	0.15 (0.04)		1.08 (0.27)	4.86 (1.59)	3.31 (1.29)	
Yizre'el & Lower Galilee	-32.28** (-4.24)	0.85 (0.22)	-7.98* (-2.36)		-1.46 (-0.27)	-2.26 (-0.41)	-3.40 (-0.86)		-6.36 (-1.96)	5.92* (2.13)	-2.79 (-1.28)	
East Valleys & Arava	-34.96* (-2.42)	5.40 (0.73)	-12.05 (-1.78)		-6.85 (-1.15)	-9.35 (-1.58)	4.71 (0.59)		-4.51 (-1.51)	-2.26 (-0.89)	-3.56 (-1.82)	
South	-15.09* (-2.21)	6.02 (1.67)	-2.01 (-0.61)		21.48 (1.86)	-20.68 (-1.97)	4.65 (1.95)		3.47 (1.45)	-0.77 (-0.44)	1.93 (1.30)	
Distance to TLV	0.36** (2.73)	-0.19** (-4.88)	-0.08 (-1.92)		-0.04 (-0.36)	0.12 (1.11)	-0.05 (-0.81)		-0.04 (-1.05)	-0.07** (-3.13)	-0.06** (-2.74)	
Year of establishment	-0.07 (-0.39)	-0.15 (-1.74)	-0.13 (-1.60)						-0.55** (-7.23)	-0.03 (-0.55)	-0.34** (-6.96)	
1995 dummy			10.53** (4.50)	14.76** (3.17)			-7.16 (-1.34)	-1.17 (-0.31)			9.12** (8.00)	8.40** (5.26)
R squared (%)	53.84	68.03	53.71	58.72	66.30	94.04	81.04	68.16	64.61	62.00	62.31	25.58
F statistic	7.82**	23.91**	20.76**	15.08**	3.81**	19.72**	17.09**	5.14**	35.05**	26.25	**	62.50**
Number of cases	131	208	340	116	47	36	85	34	404	410	815	399

Notes: t-ratios in parentheses; * significant at 5%; ** significant at 1%; coefficients of institutional affiliation dummies included but not shown for Moshav villages.

Table 5. Regression Results: Automobile Ownership

Variable	Private Jewish Localities				Private Arab Localities				Moshav Villages			
	1983	1995	pooled	panel	1983	1995	pooled	panel	1983	1995	pooled	panel
Intercept	11.19 (0.39)	-11.13 (-0.43)	31.58 (1.96)		-10.01 (-1.64)	-2.21 (-0.15)	-14.35** (-2.94)		112.56** (10.50)	-66.99** (-3.71)	76.71** (8.24)	
Population	-0.10 (-0.03)	-0.45 (-0.27)	-2.75* (-2.05)	8.29* (2.13)	0.25 (0.35)	-0.78 (-0.55)	0.24 (0.51)	-5.39 (-1.73)	-8.25** (-6.01)	7.46** (3.91)	-3.50** (-3.10)	15.79** (5.65)
Household size	0.11 (0.04)	6.23** (4.07)	3.28* (2.56)	0.57 (0.18)	0.81 (1.92)	1.58 (1.10)	1.05* (2.61)	1.13 (1.21)	-2.60 (-1.96)	0.99 (0.72)	-2.69** (-2.72)	1.16 (1.00)
Median age	-0.02 (-0.07)	0.27 (1.22)	-0.14 (-0.89)	-0.10 (-0.31)	0.35 (1.20)	0.08 (0.12)	0.42* (2.04)	0.47 (0.94)	-0.59** (-4.00)	-0.12 (-0.79)	-0.67** (-5.95)	-0.37* (-2.56)
Dependency ratio	-10.54 (-1.80)	-36.26** (-9.96)	-26.14** (-8.47)	-15.32 (-1.78)	2.08 (0.67)	-3.11 (-0.28)	2.98 (1.19)	11.63 (1.64)	7.60** (3.15)	-8.73** (-3.57)	0.62 (0.33)	-8.42** (-3.92)
High school	-0.08 (-0.87)	0.00 (0.00)	-0.12 (-1.91)	-0.04 (-0.39)	-0.01 (-0.34)	0.00 (0.02)	-0.01 (-0.38)	0.05 (1.18)	-0.12** (-3.05)	0.22** (2.84)	-0.12** (-3.23)	-0.05 (-1.11)
Higher education	-0.16 (-1.62)	0.05 (0.34)	-0.12 (-1.63)	-0.03 (-0.18)	-0.11 (-1.53)	0.20 (1.06)	-0.05 (-0.71)	-0.15 (-1.08)	0.22** (4.54)	0.40** (5.21)	0.27** (6.38)	-0.05 (-0.81)
Academic degree	-0.02 (-0.13)	-0.04 (-0.34)	0.01 (0.14)	-0.20 (-1.08)	0.05 (0.42)	-0.26 (-1.38)	0.03 (0.41)	0.08 (0.49)	-0.32** (-4.55)	0.23** (2.63)	-0.19** (-3.38)	0.07 (0.97)
Labor participation	0.16 (1.27)	0.29** (3.17)	0.26** (3.26)	0.22 (1.59)	0.05 (1.82)	0.12 (1.33)	0.06* (2.04)	0.12 (1.93)	0.05 (1.06)	0.05 (0.79)	0.01 (0.23)	-0.13* (-2.34)
Prestigious job	0.15 (0.98)	0.38** (4.68)	0.24** (3.02)	0.58** (3.37)	-0.02 (-0.30)	0.19 (1.01)	0.04 (0.61)	0.22 (1.68)	0.46** (5.69)	0.13 (1.96)	0.28** (5.38)	0.10 (1.48)
Hired employees	-0.09 (-1.30)	-0.26** (-5.11)	-0.13** (-3.18)	-0.14* (-2.10)	-0.03 (-0.80)	-0.06 (-0.62)	-0.00 (-0.02)	-0.03 (-0.59)	-0.08** (-3.18)	-0.03 (-0.73)	-0.09** (-3.99)	0.03 (1.17)

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Table 5. (continued)

Variable	Private Jewish Localities				Private Arab Localities				Moshav Villages			
	1983	1995	pooled	panel	1983	1995	pooled	panel	1983	1995	pooled	panel
Golan & East Galilee	15.58 (1.02)	9.72 (1.26)	3.01 (0.43)		0.15 (0.05)	3.46 (0.90)	2.28 (1.72)		4.23 (1.34)	7.80* (2.44)	4.57 (1.93)	
West Galilee	9.37 (0.85)	25.25** (4.63)	9.07* (1.97)		1.14 (0.71)	-0.68 (-0.18)	1.78 (1.58)		6.32 (1.84)	-2.27 (-0.69)	2.32 (0.89)	
Yizre'el & Lower Galilee	-0.59 (-0.07)	1.73 (0.40)	-4.34 (-1.14)		0.17 (0.11)	1.92 (0.61)	-0.65 (-0.48)		-3.29 (-1.19)	2.56 (0.86)	-4.40* (-1.99)	
East Valleys & Arava	20.53 (1.25)	21.32* (2.59)	8.46 (1.11)		-2.04 (-1.19)	-0.21 (-0.06)	4.03 (1.47)		-2.71 (-1.06)	-1.65 (-0.60)	-5.42** (-2.74)	
South	-7.16 (-0.92)	6.99 (1.74)	-3.80 (-1.02)		4.27 (1.28)	1.99 (0.33)	2.91** (3.58)		1.68 (0.82)	-0.88 (-0.46)	-1.45 (-0.97)	
Distance to TLV	-0.33* (-2.20)	-0.20** (-4.44)	-0.23** (-4.89)		-0.01 (-0.51)	-0.01 (-0.14)	-0.05* (-2.15)		-0.16** (-5.44)	-0.03 (-1.37)	-0.13** (-6.01)	
Year of establishment	0.25 (1.33)	0.01 (0.11)	-0.10 (-1.08)						-0.35** (-5.36)	0.26** (3.95)	-0.15** (-3.08)	
1995 dummy			17.63** (6.71)	6.72 (1.22)			3.71* (2.03)	7.41** (3.53)			16.32** (14.13)	13.44** (9.52)
R squared (%)	23.05	66.85	42.38	18.74	45.87	56.70	41.01	49.79	66.31	50.53	53.58	19.92
F statistic	2.01*	22.66**	13.16**	2.44*	1.64	1.64	2.78**	2.38*	37.79**	16.43**	43.64**	9.68**
Number of cases	131	208	340	116	47	36	85	34	404	410	815	399

Notes: t-ratios in parentheses; * significant at 5%; ** significant at 1%; coefficients of institutional affiliation dummies included but not shown for Moshav villages.

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