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## Article

# Managing service potentiality of small urban centers case study: City of Sardasht, south east of Iran

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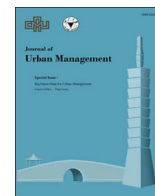
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Research article

## Managing service potentiality of small urban centers case study: City of Sardasht, south east of Iran<sup>☆</sup>

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### ABSTRACT

Many exist regions, define as deprived region. These regions must be managed by small urban regional center as regional focal points from the perspective of territorial urban development. Urban and regional development management could not be a very complicated issue while small urban regional centers have their historical, social and economic process. The problem starts, whenever, political interventions come in. Sardasht focal point has had the same story and upgraded to a city through a political declaration in 2010. It is the first urban center of Bashagard area in Hormozgan province which is located in southeast of Iran. The declaration was made to create service center to enhance development process in the area. The declaration also created centralization of essential services thereby facilitating the delivery of basic services to the people of the region. Main purpose of the article is to measure current and future role and potential of Sardasht city as a regional market town in Bashagard deprived region. In this article, the existing practices in the delivery of services in the region were analyzed to determine the role Sardasht market and the factors affecting the delivery of services as viewed by the inhabitants of rural hinterlands in the region. Two major objectives raised in the survey are capability of Sardasht city to deliver basic services to the people and the facilities are needed to be established in the town to regulate the delivery of services from the city to the surrounding areas. Data collection was done in two ways. The first one was librarian method (including statistical data of population census and residents and identity certificate of village. The second one was questionnaire research. These methods were used to obtain quantitative data set. The data provided essential index for determining the importance of relationships between Sardasht market-town and residents of its rural hinterland. In order to determine the essential statistical population, three objects were studied simultaneously (the potential of Bashagard rural residents, the geographic distribution of Bashagard villages and different levels of their services). The selected villages for questionnaire survey were 51 and the number of residents that have been questioned were about 248, which has assessed by Cochran method.

Finding showed that those services which are more important in role fulfillment of Sardasht market-town include: sanitation house, health, remedial centers, drugstore, dentistry, high school, pre-university, library, transportation, trading agricultural instrument, referring to the banks, foodstuff and nonfood stuffs stores, post office and telecommunication, referring to official & disciplinary centers, medical services, veterinary. And to some extent farming instruments markets doesn't affect role fulfillment so it should be focused by those locals in charge. Also the results showed that three settlements, Khomeinishahr, Jakdan and Goharan are going to continue the role fulfillment of Sardasht market-town.

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## 1. Introduction

Small urban regional centers as regional focal points or regional market towns are spatial nodes which manage urban-rural relationship. These regional focal points are small towns in the countryside that have a regular market and acts as a business center for surrounding farms and especially in Europe. These urban centers have a considerable potential role in regional and rural development and in poverty reduction. They can provide local markets for agricultural production. Also, the role of this kind of cities in the distribution of goods and services to their rural region is significant where there is broad-base demand especially in deprived regions (Tacoli & Satterthwaite, 2002).

Sardasht could be one of these urban centers. It is located in the region of Bashagard in Hormozgan province which is located in southeast of Iran. The Bashagard region has 248 villages and 32624 people in 2006 census. Its population has increased up to 40000 people in 2011 census. (Iran's central statistics office, 2006; NPSP, 2011a,b: 68; Iran's central statistics office, 2011). According 2011 census, total number of employed people of the city are 172 people that 151 of them work in the service sector, 15 of them work in the agriculture sector and 6 people work in the industrial sector. In other words, 87.9% of employed people work in the service sector which is strongly related to the new political role of it as center of Bashagard County. Sardasht has about 1141 residence with 204 families (in 2011 census). Six tribal families live in Sardasht that they have their origins. This caste system of the city in accompanying with its rough natural basis led to spatial and social segregation.

In 2010, political decision led to conversion Sardasht village to a city and center of the Bashagard Township. The prospect of the decision was to establish central areas with efficient and centralized divers' essential services for the people in the region.

The rank-size of Bashagard area made the conversion of Sardasht village to a city with political centrality very controversial. This controversy coupled with other issues and its capabilities in delivering basic services to the rural hinterlands are the bases of the essential questions of this research. The major questions of this study are (1) what is the position of Sardasht in hierarchical settlement system of this region? (2) Is the Sardasht city capable of doing services essential needs of rural hinterlands? And (3) which services do Sardasht need to establish to regulate the relations of city and the areas surrounding the region?

Facing a rural region which lacks essential servicing facility, city points as a higher central place for doing services to rural hinterlands especially in southeast of Iran with non-asphalt roads can be very complicated. Establishing a market-town in this region to lessen aforesaid point can be the most effective solution. So, in this article the current system in providing services in the region was analyzed. This was done by examine the current role of Sardasht market town and the factors affecting perspective services as viewed by inhabitants of rural hinterlands.

In order to answer aforesaid questions, the following topics will be discussed in this paper:

- a. current position of Sardasht in the hierarchical settlement system of Bashagard residential region,
- b. level of bilateral affiliation between current services in Sardasht market-town and the inhabitants in the surrounding rural hinterlands,
- c. current role of Sardasht market-town and the define factors which provide this role,
- d. Perspective progress of Sardasht market- town in delivering basic services to its region.

Although making political decision, on the establishment of Sardasht city as the center of township could provide a solution for rendering desirable services to rural hinterlands, it shouldn't be ignored that the current and future function of Sardasht city on the delivery of market services depends on some special factors. These factors will be explained in this paper as well the exigent of this research.

## 2. Theory and literature review

### 2.1. UFRD theory

The role which played by small towns in regional development especially urban-rural development roots is supported by various theories on urban developments. Examples are: theories by Fan Tonen (the effect of one city on domains of farming 1826), Alfred Weber (industrial place choosing 1909), Englander (the theory of transport charges 1924), Walter Crystaler (the theory of central place 1933), August Loosh (1940), Herishman, Mirdal and Prowe (the theory of polarity growth 1950–1955), Missra and part 3 of the theory of hierarchical settlement system based upon the establishment of growth points (small towns) in the region and Denis Randinli's UFRD theory (Shokuie, 1994; Ziyari, 2004, DHV, 1992; Rezvani, 2003; Papolizyazi and RajabiSanajerdi, 2003).

There exist various opinions of known or experts regarding with the roles of small towns in spatial economic development. Tisdell (1997) believes that to prevent the centralization of population in some parts, attention should be paid to the growth of small and medium towns. These are solutions stipulated in the policy of settlement system (Rezvani, Mansouriyani, & Ahmadi, 2009; Amackhi, 2004:50). Nile Hensen considers the role of small towns in national development as a factor for growth in developing countries (Rezvani et al., 2009; Bagheri, 1996:85). Rondinelli states the role of small towns in urban function on rural development (UFRD) theory in rural development. The theory was discussed focusing on the aim of adding spatial dimensions to the regional planning.

This approach assumes that if developing countries tend to reach extension, growth, and expansion in region, they should follow the dispersed geographical pattern in investing and presenting fundamental services (Zebardast, 2006).

## 2.2. Market towns as UFRD engine

The presence of some of difficulties such as lack of easy accessibility to basic services and concentration of under populated areas make the presentation of qualitative and quantitative services in some rural areas difficult (Powe and Shaw 2004). These difficulties can be resolved by creating and strengthening the role of market-town for some of settlements. Market-town is regarded as a place to live, work and business for inhabitants of city and rural hinterlands (Rogbourne and Hammond, 1998:2). These market-town centers provide essential needs for rural hinterlands settlements, and the villagers around the periphery of the town. The people from the villages surrounding the town can obtain their basic needs from the market-town centers. As a result market-towns are places which have general demanded capacity for fulfillments of their roles as central places in rural districts (DEFRA, 2000R; DEFRA, 2004; Cartwright and Swain, 1997).

There is a bilateral relationship between current quantitative and qualitative services in market-towns and the trend of population increase in rural hinterlands. It means that the improvement of the quality and quantity of current services in market-town will cause the improvement in the longevity of rural population. On the other hand the changes in population will strengthen the commercial and role of market-town. Lessening the pulling role of regional and national metropolitans in an area is a direct and manifested result of strengthening the role of market-town in spatial planning. As Powe and Shoaw (2004) stated by strengthening the role of market-towns, it is possible to claw back their missed roles from national metropolitans.

In analyzing the role of small cities in providing services to the hinterlands, essential services of rural hinterlands in market-town as well as three other features should be taken into account. These features are the effective delivery of services to market-town (Moseley, 1979; Powe and Shaw, 2004). These factors consist of accessibility, the quality of services and the resident characteristics:

a) Accessibility.

In terms of proximity to services, accessibility is defined as the place where establishments in hinterlands and the society meet from village to market-town. Distance as a factor that affect accessibility of basic services, did not play a role in absence of other services such as education (Powe and Shaw, 2004; Moseley, 1979). Based on studies the increase accessibility of the market-town by cars strongly affects the commute of inhabitants of rural hinterlands to market-towns (Forum, 2002; Guy, 1990; Powe and Shaw, 2004; England Market Towns Advisory, 2002).

b) The quality of market-town services.

The quality of services is more important than distance which plays an important factor in attracting people to avail of the services. However, the presence of nearby market-town low quality services can help sustain access to services.

c) Residents characteristics of rural hinterland.

The inhabitants of rural hinterlands have social and economical features. These features consist of private automobile, type of job, the place of job, age and gender (Pinkerton, Hassinger, & O'Brian, 1995; Civic trust, 2000; Findlay, Stockdale, Findlay & Short, 2001; Powe & Shaw, 2004). For instance, when someone becomes older, the tendency of the person to travel to market-town will decrease. Consequently it is supposed that based on accessibility, the quality of services, and the character of residents characters and market-towns play a fundamental role in regional development.

Those studies which are directly related to the roles of market-towns in providing services to rural hinterlands are much more restricted than those studies which are related to the roles of small cities in regional development.

The study which was done in this field by Tang's in Wenzhou, China, showed that development is depend on government's plan. This is based on restoration of small towns in official hierarchy in strengthening their rural market (Akbarian, 2006:10; Fanni, 2003:18). Regbourne and Hammond (1998) showed in their study that the market of Ludlow strived to recognize the internal relationships between a market-town and regional economy of periphery. Their study showed that through referrals by the residents, big supermarkets played a significant role in the social and economical development of Ludlow.

Cartwright and Swain (1997) did a research for the center of Eastern Europe studies on "finding farmers in eastern Europe". Their studies were based on Friedman's supposition that "if rural households access to land, labor and market products (it means stored products that small towns supply for rural hinterlands) can be provided by small cities. If these points were reproduced by political and official decision, barter interchanges of cities and villages would be decreased. Instead, their capabilities in production would increase." By examining aforesaid studies which were done in Czech Republic Poland, Romania, Hungary, Slovakia, it was concluded that market-towns have high capacity in providing services to rural hinterlands as well as commercial exchanges with them (Cartwright and Swain, 1997). This conclusion was verified by England rural developing documents (DETR, 2000).

In a study on "rural-urban marketing linkages" by White-T (2005) the role of market-cities and small average city centers in facilitating the relation of town village as an important factor was considered. He believed that the number of population in rural areas depends on current services and facilities in market-town as well as the ways of their access to markets. (White, 2005:4). In this study both current models and field assessment of the relations between market-towns, rural hinterlands and the guide directions followed for these assessments are presented.

The current and future role of market towns in providing services to their hinterlands a explored: a case study of Alnwick in the north east of England has been done by Powe and Shaw (2004). The main purpose of this study was providing quantitative and qualitative assessment of essential services of rural hinterlands in market-towns. The following aspects will be explained in this paper:

a) The definition of essential services.

b) Market-cities which provide services to small rural settlements.

c) Factors that affect the efficiency of market-city services.

d) Governmental policies on Alnwick market-town and its rural hinterlands.

Most of Iranian studies are in the form of thesis for universities which generally examine developing small towns by advancement of rural parts. Studies on the advancement of villages to towns and their influence in developing rural areas have already been done (Hossienihasel, 1999; IzadiKharameh, 2001; Rostami, 2001; Sheikhi, 2003; Fanni, 1996; Ghadermazi, 2004). Many researches focus on the role of small cities in spatial planning and national development plans (Fanni, 2003; Nazariyan, 1996). Their findings referred to the regional view that small towns play roles in marketing, and presentation of services and agricultural products. In addition, they concluded that in previous decades the distribution of population in city groups caused loss to small towns and on populated cities. As stated, aforesaid research examined either the roles of small towns in regional development and urban network or the functions of one or some cities in a period of time (before or after becoming a city) in regional rural development. However, in current study a region is examined which lacks any city or regional market-town in the past to manage and to provide services to its rural hinterlands. Hence, this research focuses on Sardasht services in order to recognize the effective factors in the development of market-town and determines the criterion to achieve an efficient delivery of services.

Methodically, the theatrical originality of this research is based on the potential role of small and intermediate urban centers (as regional focal points) in regional and rural development and in managing their potential to introduce themselves as regional centers. According to the aims of regional policies and UFRD theory, small and intermediate urban centers contribute to regional and rural development and their infill potential in four main ways:

- By acting as centers of demand/markets for agricultural produce from their surrounding rural region, either for local consumers or as links to national and export markets.
- By acting as centers for the production and distribution of goods and services to their rural region. Such concentration is assumed to improve access to a variety of services such as: agriculture extension, health and education, banking, post, retail shops, manufacturing goods and other government services.
- by becoming centers for growth and consolidation of non-farm and employment through the development of small and medium-size enterprises or through the relocation of branches of large private or parastatal enterprises.
- By attracting evidence rural migrants from the surrounding region through demand for non-farm labour.

The empirical evidences which have mentioned in literature, show great variations in the extent to which small and intermediate urban centers fulfill these roles.

### 3. Material and methods

This descriptive analytical study was conducted through reading books and relevant documents. At the first step, theoretical concepts and approaches are discussed along with prior studies in the field of market towns management structures. The result was a framework for analyzing management structure and spatial planning of Sardasht as the center of regions and Bashagard area. Then, this framework is utilized to field surveys and read documents and review the studies conducted on market town structure and their effect on regional spatial planning as the key element for territorial urban-regional development in the region. Finally, theoretical frameworks are combined with characteristics of urban and spatial planning in Bashagard area to find structural inconsistencies and contradictions and offer relevant solutions to enhance social and economic structure.

Data collection was done in two ways. The first one was librarian method (including statistical data of population census and residents and identity certificate of village). The second one was questionnaire research. These methods were used to obtain quantitative data set. The data provided essential index for determining the importance of relationships between Sardasht market-town and residents of its rural hinterland. In order to determine the essential statistical population, two objects were studied simultaneously. The first subject was 32424 rural residents of Bashagard, who was treated individually as the potential source of market-town of Sardasht. The second subject was the assessment of the geographic distribution of Bashagard villages and different levels services they have. Based on these services, villages were divided into three levels as low, average and high level of services. Statistical population was chosen among the inhabitants of those villages. The selected villages were 51, 23 of them have low level of services, 24 of them have average and 4 villages have high level of services.

Cochran formula was used to determine the number of Bashagard township residents needed for the statistical analysis. The result showed that 248 samples were needed for the study.

The collected data was analyzed by forming the cross-tabulation among respondent groups and following statistical techniques:

- a. Centrality index–Ci was used to determine the places of Sardasht city in hierarchical settlements system of the region and the importance of this place in current and future role fulfillment of the market-town.
- b. Chi-square was used to determine the rate of dependency and independency of variables in order to specify the effective factors in the development of Sardasht.
- c. Logistic regression model was used to specify the effective factors that affect the future services that the market-town of Sardasht can provide.

#### 3.1. Case study

Case study of the research is Bashagard county which also known as Bashākerd county. Bashagard is a county in Hormozgan Province in southern of Iran. The capital of the county is Sardasht. At the 2006 census, the county's population was 32624 in 7,174

families and at the 2011 census its population increased up to 40000 people. The county has three districts: the Central District, Gafr and Parmon District, and Gowharan District. This county has just one city: Sardasht and was separated from Jask county in 2012. As Fig. 1 shows this county has one city point and 247 rural points which three of them have population up to 750 people.

#### 4. Results and discussion

##### 4.1. Determining the centrality of Sardasht in the region's settlement hierarchy

Centrality index method is one of the methods which measures settlement hierarchy in a region. This index measures the importance of the efficiency of functions based on not only the number of functions in one place but also the abundance of functions in a whole region. In this method, functional weights of all services determine “Location Coefficient” of each settlement in the region (Hekmatniya, 2006:248). It can be obtained by this formula:

$$Ci = \frac{1}{Ti} * 100$$

*Ci is the place coefficient of function of i. Ti is the total number of function in one region*

In Ci method, major services (for example: high School or clinical center) get more weights and smaller services (for example: grocery or kindergarten) get the lower one. So, coefficient index for each settlement is equal to total weight of all functions in that settlement. Whatever centrality index of a place is higher; it means that its location coefficient is higher. Tables 1 and 2 have showed the process of calculating of the Ci.

After classifying the current functions in settlement of Bashagard region and calculating Ci for current function, centrality index of every settlement will be calculated. Total results of this computation in Table 3 are shown.

The scope of centrality index for 247 rural points is between 0.02 and 594. In order to show the settlements levels of Bashagard region, pillar-shaped chart is used. By diagramming this chart, the place of settlements hierarchy and the level of changes can be easily distinguished. In Table 4 and Chart 1, the result of pillar-shaped chart of centrality index for settlement of region are shown.

The fracture points of this chart make the five levels recognizable. The first level (500–599) includes Goharan settlement with centrality index of 595. Level 2 with centrality index of 400–499 does not include any of the settlements. Level 3 (between 300–399) with centrality index of 357.5 shows the settlement of Khomeinishahr. Level five (between 199–100) that only comprises Sardasht settlement. Other 244 rural parts with centrality index of 0–99 are included in level 6.

These results show that the features of servicing and functions of Sardasht are not effective to choose this town as a center of town and higher central place. This selection was affected by political decision.

##### 4.2. The importance of current services in market-town of Sardasht

As it was stated questionnaire research was distributed among three rural groups with low-average-high levels of services. In Table 5 the characteristics of the villages are shown.

The result shows that 88.7% of respondents refer to Sardasht to adopt the service. The rest of 31.3% to get services refer to Goharan, KhomeiniShahr and Jackan cities. (Jackdan:13%, Khomenishahr 23% and Goharan 13.7%). 38.9% of inhabitants daily, 37.4% weekly and 23.7% monthly refer to market-town of Sardasht. More ever it was cleared that 38.2 percent of respondents go to Sardasht to achieve better services. 48.9% percent of inhabitants stated that they refer to Sardasht because of the proximity of their place of living to Sardasht and the rest of 13 percent consider other factors like public transportation for referring to Sardasht city.

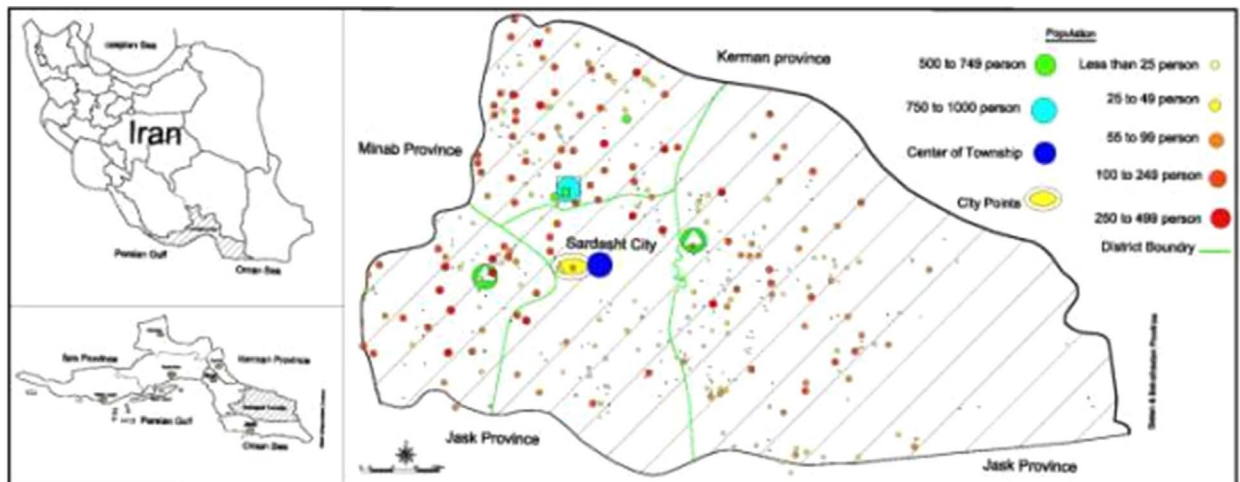


Fig. 1. : distribution of small and average cities in Bashagard region.

**Table 1**  
Calculating location coefficient of each function in each settlement.

<b>Settlements</b>	Pop	Elementary School	High School	guidance school	Public lab	Sport Places	Mosque	City/rural Council	Agriculture Service Center	Rural cooperative Company	Electricity pipe	Clean Water	Sewage	Public Bathroom	Clinic Centers	Pharmacy
Kembo	21	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bimbaki	49	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Bongorkh	52	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jakdan	792	1	1	2	1	0	1	1	0	1	0	1	0	0	0	0
Murt	82	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Derg	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sardasht	1141	1	1	2	0	0	1	1	0	1	0	1	0	0	1	1
Biscowe	115	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0
Khomeinishahr	1000	1	2	2	1	0	1	1	0	1	0	1	0	1	1	1
Goharan	867	1	1	1	1	1	1	1	1	1	0	1	0	0	1	1
<b>Total Functions</b>	140	7	22	14	1	55	104	1	43	79	0	71	2	1	4	3
<b>Location Coefficient</b>	0.71	14.3	4.55	7.14	100	1.82	0.96	100	2.33	1.27	0	1.41	50	100	25	33.3
This process has done for all settlements																
<b>Settlements</b>	Sanitation House	Maternity	Doctors	Dentistry	Other medical services	Medics	Veterinary	Post office	Telecommunications	Telephone	Public Transportation	Retail Bank	Rural Service Center	Repair agricultural machinery	Total	
Kembo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Bimbaki	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Bongorkh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Jakdan	1	0	0	0	0	0	0	0	1	0	1	0	0	0	14	
Murt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Derg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Sardasht	1	1	1	0	1	0	1	0	1	0	2	2	0	0	21	
Biscowe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Khomeinishahr	1	1	1	1	0	0	0	0	1	0	1	1	0	0	21	
Goharan	1	0	1	0	0	0	1	1	1	0	2	2	1	0	23	
<b>Total Functions</b>	25	2	3	1	9	0	2	1	33	0	37	37	1	0	698	
<b>Location Coefficient</b>	4	0	33.3	100	0	0	50	100	3.03	0	2.7	2.7	100	0	0	
This process has done for all settlements																

**Table 2**  
Calculating settlement's Ci.

<b>Settlements</b>	Elementary School	High School	guidance school	Public lab	Sport Places	Mosque	City/rural Council	Agriculture Service Center	Rural cooperative Company	Electricity	Gas pipe	Clean Water	Sewage	Public Bathroom	Clinic Centers	Pharmacy
Kembo	0.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bimbaki	0.71	0	0	0	0	0	0.96	0	0	0	0	0	0	0	0	0
Bongorkh	0.71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jakdan	0.71	14.3	9.09	7.14	0	1.82	0.96	0	2.33	1.27	0	1.41	0	0	0	0
Murt	0.71	0	0	0	0	0	0	0	0	1.27	0	0	0	0	0	0
Derg	0	0	0	0	0	0	0	0	0	1.27	0	0	0	0	0	0
Sardasht	0.71	14.3	9.09	0	0	1.82	0.96	0	2.33	1.27	0	1.41	0	0	25	33.3
Biscowe	0	0	0	0	0	0.96	0	0	1.27	0	1.41	0	0	0	0	0
Khomeinishahr	0.71	28.6	9.09	7.14	0	1.82	0.96	0	2.33	1.27	0	1.41	0	100	25	33.3
Goharan	0.71	14.3	4.55	7.14	100	1.82	0.96	100	2.33	1.27	0	1.41	0	0	25	33.3
Total	100	100	100	100	100	100	100	This process has done for all settlements	100	100	0	100	100	100	100	100
<b>Settlements</b>	Sanitation House	Maternity	Doctors	Dentistry	Other medical services	Medics	Veterinary	Post office	Telecommunications	Telephone	Public Transportation	Retail Bank	Rural Service Center	Repair agricultural machinery	Ci	
Kembo	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.71	
Bimbaki	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.68	
Bongorkh	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.71	
Jakdan	4	0	0	0	0	0	0	0	3.03	0	2.7	2.7	0	0	51.4	
Murt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.98	
Derg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.27	
Sardasht	4	0	33.3	0	0	0	50	0	3.03	0	5.41	5.41	0	0	191	
Biscowe	0	0	0	0	0	0	0	3.03	0	0	0	0	0	0	0	
Khomeinishahr	4	0	33.3	100	0	0	0	0	3.03	0	2.7	2.7	0	0	357	
Goharan	4	0	33.3	0	0	0	50	100	3.03	0	5.41	5.41	100	0	594	
Total	100	0	100	100	0	0	This process has done for all settlements	100	100	0	100	100	100	0	2300	



**Table 3**

The computation of centrality index for every village.

Row	Settlement	Ci index
1	Goharan	594.9
2	KhomainiShahr	357.4
3	Sardasht	191.3
4	39 of villages	By 10 to 70
5	85 of villages	By 1 to 10
6	120 of villages	Lower than 1

In a continuation of research respondents were asked to choose their real aims for referring to Sardasht market-town among 19 current services such as visit the doctor, house of sanitation, health center, dentistry, drugstore, guidance school, high school, pre-university, library, post office and telecommunication, transportation, trading agricultural products, agricultural tools and instruments store, agricultural repairmen tools, veterinary, bank, building material store, electrical equipment store, food stuffs store, stationery store and official and disciplinary services. A selection of this part in Table 6 is shown.

As it was shown in the table averagely 71.7% of respondents refer to market-town of Sardasht for health and remedial services. The average referrals for educational services is 76.4%, food stuffs stores 72.5%, non-food stuff stores 75.6% percent, agricultural services 69.9%, official and disciplinary 95.4%, financial and commercial 78.6%, post and telecommunication 86.3%, and transportation services are 55.7%.

It seemed that except dentistry and transportation services, the achieved results for other services show that Sardasht city is a place for getting services. However the final confirmation of this role depends on examining the result of two other important questions as well as doing Chi-square test to measure the rate of dependency or independency of the variables. These questions specify the tendency of respondents for adopting Sardasht services. The results of mentioned examination in Tables 7 and 8 are shown.

As the mentioned results shown, 68.7% of respondents always refer to Sardasht city to obtain services. Moreover, 97.7% of them prefer to refer to this place to adopt their essential services.

Since the respondents were selected from three rural groups with weak- average- high services, social and economical features, their points of view and their ways of using are different and these differences generate goals and stimulants for going to market-town. Consequently, there is dependency between mentioned social and economical variables and current /future roles of Sardasht market – town that should be specified.

In order to do this, Chi-square test is used. The results indicate that the quantities of Chi-square for services like sanitation house, health and remedial center, drugstore, dentistry, high school, pre-university, library, transportation, trading agricultural products, referring to the bank, foodstuffs stores and nonfood stuffs stores, post office and telecommunication, going to official and disciplinary centers are between  $0.00 < P < 0.045$ . Since the achieved P-values are smaller than 0.05, it can be concluded that the rate and kind of services they use in market – town of Sardasht are depend on every three rural groups with low, average, high services. Although referring to drugstores and repair center of agricultural instruments included in this category, their P-values differed from other quantities. The quantities related to veterinary and medical services are totally different. These quantities for aforesaid services equal  $P_{value}=622$  and  $P_{value}=0.365$  in order. This means that there is no dependency between these variables and the variables of level of servicing in rural hinterlands. This fact is applied more in villages with higher services. In the other words, the current role of market-town of Sardasht in doing services to inhabitants of rural hinterlands is affected by all but medical and veterinary asked services.

This point shouldn't be ignored that some parts of rural population would not refer to Sardasht city for adopting services. The results show 28.3% for medical remedial services, 23.6% educational, 27.5% for providing foodstuffs, 24.5% for providing nonfood stuffs, 31.1% for agricultural services, 22.4% for commercial and financial, 44.3% for transportation are provided by the periphery of Sardasht market-city. In the results, it is indicated that 17% refer to Jakdan, 3% to Khomeinishahr, 13.7% go to Goharan city.

#### 4.3. The effective factors on future role of Sardasht market-town

In order to show the future perspective of Sardasht market-town, it is necessary to specify the effective factors in supplemented

**Table 4**

Classifying the Bashagard settlements based on pillar-shaped chart.

Level	Ci index	Settlement
1	500 - 600	Goharan
2	400 - 499	0
3	300 - 399	KhomainiShahr
4	200 - 299	0
5	100 - 199	Sardasht
6	0 - 99	Other 244 villages

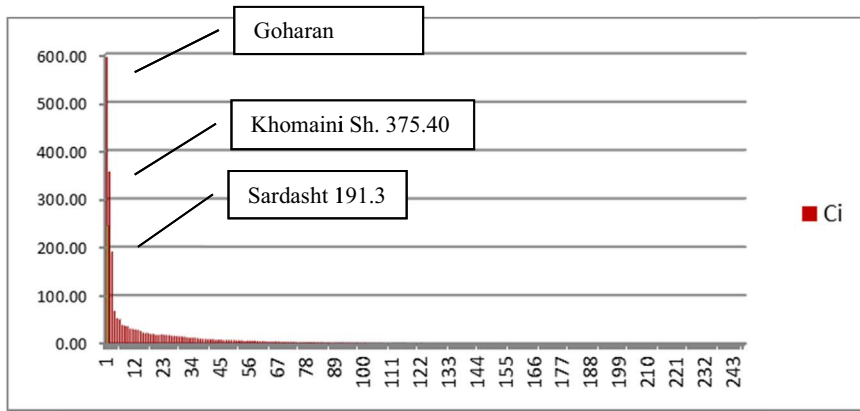


Chart 1. Classifying levels of Bashagard settlement based on pillar-shaped chart.

role. As it was explained, those services which are effective in current role fulfillment of market- town of Sardasht consist of, sanitation house, remedial and health centers, drugstore, dentistry, high school, pre-university school, library, transportation, trading farming tools, referring to the bank, foodstuffs and nonfood stuffs stores, post office and telecommunication, referring to official and disciplinary centers. However medical services, veterinary and some extent repairing agricultural tools are not considered effective in aforesaid supplemented role.

Fitting is a multi-variables method the same as the one that Guy in 1990 and Show and Pawe in 2004 had done in their researches can be using the logistic regression model. In this model if variable of answering part be shows by 1and2, their changes will be written as the below conditional probability:

$$p^1 | i_2 - i_m = p$$

And if they have been written based on a multi sentences model, it can be expressed in this way (Bayazidi, Oladi, & Abasi et al., 2009: 147)

$$p^1 | i_2 - i_m = \frac{p^1 | i_2 - i_m}{p^1 | i_2 - i_m + p^2 | i_2 - i_m}$$

Those variables that are used in this part of analysis consist of current services in market- town, the distance from villages to Sardasht, their population, age, gender, and respondents' jobs. Answering variable consists of "the rate of respondents' tendency to refer to market-town of Sardasht for gaining services in future", and it had better that the answering levels have 2 parts. e.g(1=yes, 2=No).

Since the results of logistic regression model are various, in this research only three parameters are used. Those are 2 log (likelihood), "B logit", and exp (B) logit", and "table of variables in equation".

**2log (likelihood):** this statistic is the same as Chi-square and when one model corresponds desirably with other data, its quantity would be small. And when this correspondence was not desirable, this quantity would be large.

**B logit:** this index shows the probable respondents' referrals to market-town of Sardasht for getting services. The larger quantity makes it more probable, referrals and vice versa.

**Exp (B) logit:** this index can be calculated  $e^B$  by. That one can be considered the chance of those services (variables) for being adopted again.

In order to recognize the effective factors on future role of market-town of Sardasht, mentioned model is applied to two groups of explanatory regression. At first, economical social variables like place of living, the distance from place of living to Sardasht city, settlements population and their types of occupations. Thereafter other variables consisting of referring to doctor, sanitation house, remedial and health center, dentistry, drugstores, high school, pre-university school, post office and telecommunication, transportation, farming product store, selling agricultural instruments, agricultural tool repair shops, foodstuff and nonfood stuffs stores, official and disciplinary centers.

The written results in Tables 9 and 10 show the effect of economical–social variables on different ways of referring to Sardasht market-town to access in future services.

The aforesaid table indicates that among socio-economical factors, "rural inhabitants with low services" variable with 12.923 Exp(B)quantity undertake the impression on future perspective of Sardasht market-town. The second effective factor will be "rural inhabitants with average services" with 7.843 Exp(B). In this order "agricultural jobs" with 2.335, "living in settlements with 50 km less distant from Sardasht" with 1.931 Exp(B) are the subsequent effective levels.

Among aforesaid factors, two variables have the least effect on rural inhabitants' referrals to market-town of Sardasht. These are "villages with less than 1000 population" and "setting in villages with 100–250 population".



**Table 6**

The goals of inhabitants' referrals to market-city of Sardasht(percent).

Services Calculations	Sanitation & health Services	Educational & Cultural Services	Food stuffs stores	Non-Food stuffs stores	Agricultural Services	Official and disciplinary services	Commercial services	Post office and telecommunication	Transportation Services
Mean	71.74	76.36	72.50	75.56	69.85	95.40	78.60	86.30	55.70
Min	45.80	75.60		74.00	51.90				
Max	88.50	77.90		77.90	80.90				

**Table 7**

How do you agree this sentence "I would rather refer to Sardasht to supply the essential services of me and my family"?

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Totally agree	26	19.8	20.3	20.3
Agree	99	75.6	77.3	97.7
Disagree	3	2.3	2.3	100.0
Total	128	97.7	100.0	
Totally disagree	3	2.3		

**Table 8**

Do you always go to the Sardasht city to adopt services?

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	90	68.7	68.7	68.7
No	41	31.3	31.3	100
Total	131	100	100	

**Table 9**

Interaction history of economical –social variables.

Iteration		-2 Log likelihood	Coefficients						
			Constant	Agricultural jobs	Living in a weak level servicing village	Living in a average level servicing village	Living in a village with distance less than 50 km to market-town	Living in a village with distance less than 20 km to market-town	Living in a village with distance between 20 to 50 km to market-town
Step 1	1	216.843	-5.898	.740	2.307	1.818	.572	-.588	-1.101
	2	216.630	-6.783	.845	2.547	2.047	.655	-.620	-1.153
	3	216.629	-6.827	.848	2.559	2.060	.658	-.620	-1.153
	4	216.629	-6.828	.848	2.559	2.060	.658	-.620	-1.153

a Method: Enter.

b Constant is included in the model.

c Initial -2 Log Likelihood: 238.070.

d Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

**Table 10**

Variables in equation for social–economical variables.

	B	S.E.	Wald	df	Sig.	Exp(B)
Agricultural jobs	.848	.939	.816	1	.366	2.335
Living in a weak level servicing village	2.559	.799	10.259	1	.001	12.923
Living in a average level servicing village	2.060	.651	10.000	1	.002	7.843
Living in a village with distance less than 50 km to market-town	.658	.454	2.103	1	.147	1.931
Living in a village with distance less than 20 km to market-town	-.620	.708	.769	1	.381	.538
Living in a village with distance between 20 to 50 km to market-town	-1.153	.481	5.757	1	.016	.316
Constant	-6.828	2.750	6.166	1	.013	.001

a Variable(s) entered on step 1: Agr.Job, Living in W.L.S, Living in A.L.S, Living in less than 50 km, Living in less than 20 km Living between 20 to 50 km.

**Table 11**  
Interaction history of remedial and health variable.

Iteration		-2 Log likelihood	Coefficients					
			Constant	DOCTOR	Sanitary House	Remedial	Dentistry	Pharmacy
Step 1	1	194.386	-3.137	.659	.104	-.953	.585	1.976
	2	190.581	-4.019	.793	.065	-1.344	.699	2.995
	3	190.068	-4.492	.795	.055	-1.442	.716	3.558
	4	190.042	-4.638	.793	.055	-1.450	.717	3.712
	5	190.042	-4.649	.793	.055	-1.451	.717	3.723
	6	190.042	-4.649	.793	.055	-1.451	.717	3.724

a Method: Enter.

b Constant is included in the model.

c Initial -2 Log Likelihood: 238.070.

d Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

**Table 12**  
Logistic indexes for health & remedial variables.

	B	S.E.	Wald	df	Sig.	Exp(B)
Visit Doctor	.793	.570	1.938	1	.164	2.210
Referring to sanitation house	.055	.413	.018	1	.895	1.056
Referring to sanitation Centers	-1.451	.659	4.850	1	.028	.234
Referring to dentistry	.717	.407	3.098	1	.078	2.049
Referring to drugstore	3.724	1.181	9.943	1	.002	41.409
Constant	-4.649	1.173	15.718	1	.000	.010

**Table 13**  
Interaction of educational variables.

Iteration	-2 Log likelihood	Coefficients		
		Constant	Referring to high school	Referring to pre-university school
1	186.982	-3.151	1.997	.319
2	185.860	-3.622	2.258	.471
3	185.846	-3.671	2.283	.494
4	185.846	-3.672	2.283	.494

a Method: Enter.

b Constant is included in the model.

c Initial -2 Log Likelihood: 238.070.

d Estimation terminated at iteration number 4 because parameter estimates changed by less than .001.

**Table 14**  
Interaction of cultural variables.

Iteration		-2 Log likelihood	Coefficients	
			Constant	Library
Step 1	1	135.964	-4.271	3.071
	2	128.788	-5.500	4.123
	3	127.812	-6.014	4.627
	4	127.760	-6.162	4.776
	5	127.759	-6.174	4.787
	6	127.759	-6.174	4.787

a Method: Enter.

b Constant is included in the model.

c Initial -2 Log Likelihood: 238.070.

d Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

The mentioned process has been done for all effective services (variables) on the role of Sardasht market-town. In order to have desirable analysis of the above variable effects, and because of soft-ware limitation, they are classified into six groups of health & remedial, educational, official and disciplinary, transportation & accessibility to foodstuffs and nonfood stuffs sores.(Table 11).

**Table 15**  
Logistic indexes for educational services.

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Referring to high school	2.283	.709	10.373	1	.001	9.809
Referring to pre-university school	.494	.738	.448	1	.503	1.639
Constant	-3.672	.594	38.171	1	.000	.025

a Variable(s) entered on step 1: DABIREST, PISHDANE.

**Table 16**  
Logistic indexes for cultural services.

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Library	4.787	.757	39.966	1	.000	120.000
Constant	-6.174	.863	51.235	1	.000	.002

a Variable(s) entered on step 1: Library.

Like previous parts, in this section there is a good correspondence between data and model since the differences between initial -2log likelihood (238.070) and the average of -2log likelihood will be almost 43.6 units. In Table 12, the quantities of logit can be seen for remedial and health variables.

The coefficient shows that referring to drugstore and doctor with probable index of 41.409 and 2.210 will be the most referrals to market-town of Sardasht among health variables. Since the P-value of these two is very different in comparison with other variables in this group, it is vital to pay attention for doing services in the future.

The results related to educational variables verify not only the desirable correspondence of data and variables but also the effects of aforesaid variables in future fulfillment of Sardasht as a market-town of rural hinterlands (Tables 13–16).

Variables the probable indexes for future referrals to Sardasht city for accessibility to services of high school, pre-university, library will be 9.809, 1.693 and 120.0 in order. Among the mentioned variables, referring to library is more than others.

Next results would be exciting, -2log likelihood for transportation variables, official and disciplinary, accessibility to foodstuffs and nonfood stuffs stores equal 169.070. The 69 units of differences with initial -2 log likelihood with 238.070 indicate the correspondence the model with date. The logit index shows low, average, high levels of aforesaid variables in future referring to Sardasht market-town. The variables of referring to “building material store”, “referring to bank” and “foodstuffs stores intensely” affect the future referrals. The variables of “referring to light agricultural repairment store”, “official and disciplinary center”, “referring to the post office and telecommunication” for adopting services, “referring to dentistry” and “accessibility to trading agricultural stores” have the average effect. Finally, those two variables with low influence are “referring to transportation services” and “stationery stores”. The results are indicated in Tables 17 and 18.

## 5. Conclusion

This research shows despite lacking suitable place in settlement hierarchical system, Sardasht city is inhabitants' aim for getting services. It can be concluded that about 78% of respondents have daily, weekly and monthly referrals to Sardasht market-town. Averagely, rural hinterlands inhabitants for getting services to Sardasht market-town equal 71.1% for remedial health services, 76.4% educational, 72.5% foodstuffs store, 75.6% nonfood stuffs stores, 64.9% agricultural services, 95.4% official and disciplinary, 78.6% financial and commercial, 86.3% post office and telecommunication and 55.7% goes to transportation services.

In other words, those services which are more important in role fulfillment of Sardasht market-town include: sanitation house, health, remedial centers, drugstore, dentistry, high school, pre-university, library, transportation, trading agricultural instrument, referring to the banks, foodstuff and nonfood stuffs stores, post office and telecommunication, referring to official and disciplinary centers, medical services, veterinary. And to some extent farming instruments repairment doesn't affect role fulfillment so it should be focused by those locals in charge.

The results show that three settlements, Khomeinishahr, Jakdan and Goharan are going to continue the role fulfillment of Sardasht market-town. Totally 32% of the regional referrals is allocated to those settlements. By considering the level of doing services and the location of aforesaid settlements these results were predictable. Since, each of these settlements has direct influence that can attract Sardasht referrals to themselves. Another point that should be regarded is that location of Sardasht with distant of 20 and 19 km between Goharan and Jakdan will result in 13.7 and 17 percent of aforesaid town referrals attraction. Consequently, any negative changes in qualification and quantification of services in Sardasht will be for its rival profits. This shows that, although the role of Sardasht market-town is so desirable in servicing, it can be threatened severely.

In determining the effective factors in current supplemented role of Sardasht market-town in servicing to rural hinterlands, some points are used consisting using the achieved abundance of questionnaires, using two main questions, doing test, among variables which show economical – social features of respondents and those variables which show current services in Sardasht city. The results indicate that the rate and kind of using current services depend on 3 rural groups with low-average and its services. However these results are totally different for medical and veterinary services.

**Table 17**  
Interaction history of transportation, official and disciplinary and accessibility to foodstuffs & nonfood stuffs stores.

Iteration	-2 Log likelihood	Coefficients											
		Constant	post office and telecommunication	transportation services	accessibility to selling & buying agricultural stores	accessibility to agricultural tools store	accessibility to light agricultural repairment store	referring veterinarian to agricultural stores	referring to bank	referring to building material store	referring to scribal store	referring to glossary shops	referring to official & disciplinary center
1	173.45	-4.701	-1.172	.026	.038	.275	.795	.190	.750	1.219	-1.135	.746	.740
2	168.37	-6.325	.281	-1.111	.194	.494	.910	.207	1.09	1.496	-1.547	1.048	.796
3	167.85	-6.915	.493	-.201	.314	.594	.944	.186	1.27	1.564	-1.765	1.195	.799
4	167.84	-6.983	.510	-.215	.336	.601	.952	.186	1.30	1.569	-1.801	1.219	.794
5	167.84	-6.984	.510	-.216	.336	.601	.953	.186	1.30	1.569	-1.801	1.220	.793

a Method: Enter.

b Constant is included in the model.

c Initial -2 Log Likelihood: 238,070.

d Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

**Table 18**

Logit indexes for variables of communication, official and disciplinary and accessibility to foodstuffs &amp; nonfood stuffs stores.

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
post office and telecommunication	.510	.660	.598	1	.439	1.666
transportation services	-.216	.462	.218	1	.641	.806
accessibility to selling & buying agricultural stores	.336	.622	.292	1	.589	1.400
accessibility to agricultural tools store	.601	.843	.508	1	.476	1.824
accessibility to light agricultural repairment store	.953	.413	5.328	1	.021	2.593
referring to veterinarian	.186	.653	.081	1	.775	1.205
referring to bank	1.306	.724	3.252	1	.071	3.690
referring to building material store	1.569	.502	9.785	1	.002	4.804
referring to scribal store	-1.801	.793	5.159	1	.023	.165
referring to glossary shops	1.220	.740	2.718	1	.099	3.386
referring to official & disciplinary center	.793	1.406	.318	1	.573	2.210
Constant	-6.984	1.810	14.889	1	.000	.001

**Table 19**

Classifying the effective variables on future referrals to Sardasht market- town.

Services (Functions)	B	S.E.	Wald	df	Sig.	Exp(B)	Effectiveness
Library	4.787	0.757	39.966	1	0	120	Very high
Referring to drugstore	3.724	1.181	9.943	1	0.002	41.409	High
Referring to high school	2.283	0.709	10.373	1	0.001	9.809	High
referring to building material store	1.569	0.502	9.785	1	0.002	4.804	High
referring to bank	1.306	0.724	3.252	1	0.071	3.69	Normal
referring to glossary shops	1.22	0.74	2.718	1	0.099	3.386	Normal
accessibility to light agricultural repairment store	0.953	0.413	5.328	1	0.021	2.593	Normal
Visit Doctor	0.793	0.57	1.938	1	0.164	2.21	Normal
referring to official and disciplinary center	0.793	1.406	0.318	1	0.573	2.21	Normal
Referring to dentistry	0.717	0.407	3.098	1	0.078	2.049	Normal
accessibility to agricultural tools store	0.601	0.843	0.508	1	0.476	1.824	Low
post office and telecommunication	0.51	0.66	0.598	1	0.439	1.666	Low
Referring to pre-university school	0.494	0.738	0.448	1	0.503	1.639	Low
accessibility to selling and buying agricultural stores	0.336	0.622	0.292	1	0.589	1.4	Low
referring to veterinarian	0.186	0.653	0.081	1	0.775	1.205	Low
Referring to sanitation house	0.055	0.413	0.018	1	0.895	1.056	Low
transportation services	-0.216	0.462	0.218	1	0.641	0.806	Very low
Referring to sanitation Centers	-1.451	0.659	4.85	1	0.028	0.234	Very low
referring to scribal store	-1.801	0.793	5.159	1	0.023	0.165	Very low

To determine the effective factors in supplemented role and the future perspective of Sardasht market-town services logistic regression is used. The results show that current services in Sardasht have the range effect of: so much, much, mediocre, a little, little in future referrals to market town indicated in the table (Table 19).

The fact that why current services in Sardasht have this range of effects to attract of future referrals of rural hinterlands, definitely need other examination that separately and in a continuation of this research will be done.

As many similar papers, a growing of understanding of the essence of small urban centers as market towns and their rural surrounding area, can be fined in this article. Although it is probable that there will be many common features to all small urban centers, but there are more differences between them. In compare with all Iranian cases which have mentioned in literatures, this paper has just focused on role of market towns as small urban and intermediate regional centers. Most of Iranian studies are in the form of thesis for universities which generally examine developing small towns by advancement of rural parts. Also, studies on the advancement of villages to towns and their influence in developing rural areas have already been done. Findings of the case of Sardasht have developed the related literature in Iranian researches, because up to now in Iran universities the role of market-town in doing services to rural hinterlands is not focused harshly. On this atmosphere the research has been done on Sardasht city as a market-town.

In compare with foreign researches it will be better to consider a novel approach which is supported by England government (Powe and Shaw, 2004). The results of this research suggest a mutual dependence between market town services and hinterland residents and that the continuation of this relationship depends on market towns taking advantage of demographic trends in rural areas. Faced with changing demographics and the wider use of the Internet, potential is identified for 'clawing-back' trade from larger urban areas and creating an enhanced role for market towns. Although they are the same in literature and methods, but in results and nature of services are totally different.



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