The Quality of Life in the Historic Centre of Naples: the use of PLS-PM Models to measure the Well-Being of the Citizens of Naples

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Abstract How do the citizens of the historic centre of a city perceive the quality of their living conditions? The objective of this research has been to identify a series of indicators focused on the crucial aspects that, directly or indirectly, influence and determine the level of well-being of individuals and local communities in the city of Naples, describing and measuring specific social and local phenomena. In the survey, the same dimensions of the BES (Benessere Equo Sostenibile – Equitable and Sustainable Well-being) have been considered, together with others added ad hoc, relating to topics such as tourism and district, factors closely related to the character of the city's historic centre. In this paper we propose the use of Structural Equation Models, estimated using the Partial Least Squares-Path Modeling method, to measure the perception of the quality of life and to identify the weights of its dimensions and items.

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A. Bianco et al. (eds.), *Italian Studies on Quality of Life*, Social Indicators Research Series 77, https://doi.org/10.1007/978-3-030-06022-0_8

Quality of Life in the Urban Context

Over the last few decades, the concept of quality of life has changed contextually with the changes in the needs of the population and in the cultural, social and value models of reference. The theoretical framework of the concept – developed from philosophical reflections on the primary and secondary needs of the individual (Inglehart 1983) – has gradually grown more complex in order to embrace a multitude of factors that situate the concept of quality of life at the heart of many disciplines (from economic to ecological, from psychological to sociological). National and international studies on this topic have contributed to the establishment of a research tradition that, starting from the results of the Movimento degli indicatori sociali (Social Movement Index) in the 1960s, has placed the state of the material and immaterial well-being of the citizens at the centre of the debate, with different undertones. As Nuvolati recalls (Nuvolati 2009, 2010), after the first important studies carried out in the 1970s and 1980s (Baldwin et al. 2002; Campbell et al. 1976; Szalai and Andrews 1980; Stull 1987), the number of research studies has been increasing, with theoretical insights into the concept of quality of life which have also involved several Italian scholars (Cicerchia 1996; Gadotti 1986; Graziosi 1979; Schifini 1988; Spanò 1989; Vergati 1985). In general, the close relationship between the dimensions of "quality of life" and "well-being" often makes the use of both terms in literature interchangeable, but what is important to emphasize in relation to the theoretical and methodological reflections on the quality of life is the constant reference to a multidimensional set of domains: economy, health, social relationships, environment, and security (Hajiran 2006). There is a widespread agreement among scholars of different disciplines in defining the quality of life as a broad concept, which includes the whole range of factors that affect our everyday life, beyond the strictly material aspects (Stiglitz et al. 2010). In the field of social sciences, the concept of quality of life represents a theoretical point of view through which to observe the changes related to lifestyles and to identify a series of problems that are assuming particular significance in post-industrial societies. These changes regard, in general, a multiplicity of dimensions (material and immaterial) that can be associated to (and can involve) the state of well-being of the individuals. Poverty, pollution, security, social isolation, the availability of services, for example, are just some of the factors that contribute to define the concept of quality of life and that are particularly evident when we analyse the "urban context". During the last years, the empirical research has paid particular attention to the study of the quality of life in urban contexts with the aim to estimate how liveable a city is in its multiple aspects. In this sense, talking about quality of life in the urban context means to analyse in depth the places where these phenomena are most striking and are able to affect the populations emerging needs, lifestyles and expectations. Such considerations lead us to analyse a context – the city – where economic and cultural factors, material and immaterial elements, intertwine and determine the quality of life as a result of a process that does not depend on the mere presence of an infrastructure but rather on the real use of the city itself. The urban space, in the physical and social sense, is

the "boundary" in which the living conditions, accessibility and usability of services can affect the well-being of citizens. Although the quality of life in cities remains a phenomenon which is not simple to be read (Martinotti 1988), conditioned by the same complexity and size as the urban contexts (Gasparini 2000), analyzing the phenomenon is crucial in order to respond to the social needs of the citizens and is one of the main objectives of local government policies, also linked to the ability of the public actor to respond to the local needs.

The Survey: Objectives and Methodology

The objective of this research has been to identify a series of indicators focused on the crucial aspects that, directly or indirectly, influence and determine the level of well-being of individuals and local communities in the city of Naples, describing and measuring specific social and local phenomena. The historic centre of Naples represents an example of an urban settlement as an international historic layering of cultural, natural and social values. In 1995 the historic centre of Naples was recognized by UNESCO as a "world heritage site of humanity". It is the location of memories of the past, a geographical area in which a large part of the national cultural heritage is concentrated, in terms of both buildings and the wider urban fabric, consisting of streets, gardens and squares. It is an architectural heritage characterized by its intrinsic value, art as a historical message, with extremely productive yet not fully effective cultural districts. However, it is also characterized by certain peculiarities that often compromise the quality of life of its citizens, having a significant impact on the well-being of the individuals living in the area on a daily basis. In particular, the research has focused on the identification of subjective social indicators for the evaluation and perception of whether and how far the citizen is satisfied with his/her living conditions.[1] When we examine the concept of quality of life at the urban level and try to measure it and evaluate it, we are faced with a difficult challenge, both methodologically and theoretically, as structured initiatives in this direction are not yet widespread. The data are not easily accessible, and, above all, they have been collected and systematized little, badly and unevenly. For this reason, the questionnaire was designed in order to analyze the perceptions expressed by the respondents with respect to a list of issues that affect the individual and collective well-being. In this research we considered as the starting point one of the most articulate and well-constructed achievements in the research of an alternative measurement of well-being: the BES, an indicator of Equitable and Sustainable Well-being. This project was stimulated by the belief that the parameters against which to evaluate the progress of a society should not be only economic,

[1] While objective social indicators are statistics which represent social facts independent of personal evaluation, subjective social indicators are measures of individual perceptions and evaluations of social conditions (Noll 2004).

but also social and environmental, accompanied by measurements of inequality and sustainability. The BES has been taken as a reference point. Our questionnaire is making use of some of its dimensions and related items; other dimensions have been added ad hoc. In detail, out of the twelve dimensions of the BES, nine dimensions have been chosen to build the questionnaire because they have been considered to be dimensions closely linked to the concept of perceived quality of life in the historic centre contest. They are: "Environment", "Economic Well-Being", "Social Relations", "Personal Safety", "Subjective Well-Being", "Landscape and Cultural Heritage", "Quality of Services", "Work and Reconciliation of Life Time" and "Education and Training". In particular these last two dimensions have merged into a single block "Personal data". Three dimensions have not been considered in building the questionnaire: "Health", "Research and Innovation", "Politics and Institutions", because they are mainly quantitative in size and, for matters pertaining to the METRICS project, they have been considered to be topics not strictly related to the concept of perceived quality of life of the citizens of Naples historic centre. Two dimensions have been added ad hoc such as "Tourism" and "District", factors closely related to the city's historic centre. In particular tourism in recent years has become activity that enables the influx of tourists throughout the year, and therefore the citizens of the historic center must live daily with the constant presence of tourists. This situation on the one hand can be positive for the local economy but on the other hand it can negatively affect the quality of life of citizens. All of these dimensions have been taken into account in the measurement of the quality of life of the citizens of Naples historic centre, combining dimensions that directly or indirectly affect and determine the level of well-being of individuals and local communities. The questionnaire consists of 7 thematic sections:

- *The District* (7 questions)
  This dimension concerns the level of satisfaction of the respondents with respect to their living conditions and their level of knowledge of the neighbourhood;
- *Environment and Tourism* (5 questions)
  The environment in which the citizens live strongly affects their well-being. From the resources that feed the production and the economy, to the pleasure that the contact with nature gives us, human well-being is inextricably linked and dependent on the environment. Tourism is not always a positive resource for the quality of life of citizens, and therefore it is useful to analyze the impact that it exerts on the local population;
- *Quality of Services* (11 questions)
  The analysis of well-being and of the opportunities of progress requires an assessment of the infrastructure and the provision of services, reinterpreting them in light of their functionality and efficiency, the degree of use, measures of accessibility, the quality of the service generated and any possible congestion;
- *Networks and Social Relations* (5 questions)
  The intensity of the social relationships that are maintained and the social network in which they are placed not only affects the psycho-physical well-being

of the individual, but represents a form of "investment" that can strengthen the effects of human and social capital;

- *Safety* (5 questions)
  Personal security is a fundamental element in the well-being of individuals. The most important impact of crime on the well-being of people is the sense of vulnerability that it determines. The fear of being a victim of criminal acts can greatly affect your personal freedom, your quality of life, and the development of the area. The issue of violence is also closely related to personal safety and quality of life;
- *Subjective well-being* (3 questions)
  The assessment of subjective well-being is considered by citizens as one of the most important elements in the evaluation of general well-being; and
- *Personal data* (10 questions)
  Professional status, type of contract and income are crucial determinants that strongly affect the perception of an individual's quality of life.

Most of the dimensions were detected by using measurement scales that connect the degree of "agreement" or "disagreement" with specific statements, in order to understand the opinions of respondents with respect to the different thematic sections. In other cases, multiple choice questions were formulated. The statistical population forming the subject of this study consists in the population of the residents of the historic centre of Naples. The unit of analysis in this case is represented by the individual resident. As a sampling list, it was decided to use the electoral lists, made available by the Municipal Election Office. From this list, a simple random sample was chosen. The quality of life is considered in this work as a Composite Indicator (CI). CIs, in the social sciences, are used increasingly frequently for the measurement of very complex phenomena, such as poverty, progress and well-being (Mazziotta and Pareto 2011; Salzman 2003). The goal of much research in the social, economic and political fields is to obtain a whole description of the various facets of a complex phenomenon, through a suitable synthesis of the associated elementary indicators (EIs) (Lauro et al. 2017). Accordingly, a CI can be considered as a latent concept, not directly measurable, whose estimation can be obtained through the values of the Manifest Variables (MVs). The existing literature offers different alternative methods in order to obtain a CI. The Structural Equation Models (SEMs) (Wold 1985), estimated using the Partial Least Squares-Path Modeling method (PLS-PM) (Tenenhaus et al. 2005), can be used to compute a system of CIs. According to this methodology, it is possible to define a CI as a multidimensional Latent Variable (LV) not measurable directly and related to its single indicators or MVs by either a reflective or formative relationship or by both (this defines the measurement or outer model). Each CI is related to other CIs, in a systemic vision, by linear regression equations specifying the so called Structural Model (or Inner Model). So, we use the PLS-PM to measure the perception of the quality of life and to identify the weights of its dimensions and items. Indeed, the quality of life is linked with other constructs (environment, tourism, quality of services, networks and social relations, safety, subjective and

economic well-being, education and training) representing the different dimensions, that are not directly observable but are connected to the single MVs by a reflective relationship. The choice of using the PLS-PM as the methodological framework was made for several reasons. Specifically, it provides:

- the possibility of obtaining, simultaneously and coherently with the estimation method, a ranking of individuals for specific indicators;
- the possibility of comparing systemic indicators in space and in time;
- the possibility of estimating the hypothesized relationships without making assumptions about data distribution;
- the possibility of defining an optimal system of weightings;
- the possibility of working with a large number of variables and a few observations;
- the possibility of estimating complex models without any problems of identification of the model; and
- the possibility of working with missing data and in the presence of multicollinearity.

The PLS-PM approach to SEM consists of an iterative algorithm that computes the estimation of the LVs, measured by a set of MVs, and the relationships between them, by means of an interdependent system of equations based on multiple and simple regression. The idea is to determine the scores of the LVs through a process, that, iteratively, computes first an outer and then an inner estimation. PLS-PM is a suitable tool for the investigation of models with a high level of abstraction, in cases where the building of a system of CIs depends on different levels of construction. Higher-order constructs in PLS-PM are considered as explicit representations of multidimensional constructs that exist at a higher level of abstraction and are related to other constructs at a similar level of abstraction, completely mediating their influence from or to their underlying dimensions (Chin 1998). This theoretical model is used in order to estimate the higher-order CI, "perceived quality of life". In particular, the Mixed Two-Step Approach has been developed, proposed by Cataldo (Cataldo 2016), using the "plspm" package in the R statistical software (Sanchez and Trinchera 2012).

The Dimensions of the Quality of Life in Naples Historic Centre

During the survey, a total of 312 completed questionnaires were collected. The sample of respondents is therefore characterized by a deep knowledge of the problems of the historic centre: many of these individuals have grown up in the neighbourhood and have chosen to live there even after leaving the nuclear family, moving to live on their own or to create their own family but staying in the same area. From a first analysis of the data, the main issues that seem to

Table 1 The dimensions of the quality of life

Interventions to improve the environmental quality	
(1 not important; 5 very important)	
	Mean
Cleaning the public area	3.6
Securing the buildings	3.0
Improving the street furniture	3.0
Tourist flows contribute to:	
(1 not agree; 5 completely agree)	
	Mean
Improving the economy of the area	4.8
Increasing the prestige of the area	4.3
Making the area more "lively"	4.0
Factors of social insecurity	
(1 not important; 5 very important)	
	Mean
Micro-criminality	3.4
Racketeering, the "camorra"	3.3
Subjective well-being: particular conditions	
(1 not satisfied; 5 completely satisfied)	
	Mean
Relationships	3.8
Health	3.6
Free time	3.1
Economic status	2.7
Safety	2.5

impact on the quality of life of the respondents can be summarized as follows (Table 1): on the environmental quality, "cleaning the public area" represents, in the perception of the interviewees, the factor on which it is necessary to take action, followed by "securing the buildings" and "improving the street furniture (roads, manholes, benches, sidewalks, etc.)". Specifically, the use of public spaces plays an important role in the respondents perceptions. For those who live in the city historic centre public spaces acquire a special significance in the everyday practices of socialization. Among the most significant features of this area are its lively night life and its high tourist density. This continuous crowding, however, sometimes hinders the collection of garbage thus reducing the public spaces cleanliness.

The aspects mentioned above are those that, more than the others, the interviewees regarded as important for the improvement of the whole area, whose relevance is even higher if we consider the huge growth of tourism during the last five years.

The dimension of tourism is, in fact, an important driving factor for the economic development of the area. The respondents seemed to be aware of the socio-economic and cultural value that tourist flows can generate. Although the particular urban structure of the whole area, characterized by narrow streets and lanes which can

become very crowded during periods of strong tourism, can create inconvenience in many periods of the year, the majority of the respondents considered tourism as a resource for the local economy that enhances the prestige of the area and makes it more attractive and lively. No negative implications seem to emerge with respect to the way citizens perceive the dimension of tourism and relate it to the perception of their quality of life. All the items included in the questionnaire which explore any forms of inconvenience that might be attributed to the increase of tourist flows show low scores, confirming the positive effect that tourism has on the citizens of the area. Therefore, which are the main factors of social insecurity? Micro-criminality, racketeering and the Camorra (the main Neapolitan crime syndicate) are the phenomena that achieve the highest average rating among the issues examined. The respondents generally agree in confirming the presence of criminal episodes in the area, but the results of the survey do not allow us to assign these phenomena an important role in determining a clearly negative impression of the quality of life in this neighbourhood. Criminality does not seem to erode the satisfaction of living within the historic centre and, in spite of criminal episodes, the respondents do not perceive the area as particularly dangerous. Even the literature on crime security and the quality of life in Naples is ambiguous on this aspect, and our research did not show a very significant association either. Based on this analysis, insecurity does not seem to have a strong impact on the perception of the quality of life (average 2.5 Table 1). Generally, the respondents have a positive perception of their own life and well-being, positively related (above all) by the relationship and health dimensions. As shown in Table 1, no dimensions appear to have a significant importance on the quality of life of the citizens of the historic centre. Based on the average ratings, we can assume that the dimensions listed in the table do not condition the subjective perception of well-being. Additionally, economic conditions do not constitute a determining factor: the majority of the sample (65%) declared that they had no economic difficulties. The interviewees income did not modify their perception of quality of life and their styles of consumption. The same result emerges in an analysis of the student cluster, where economic status enters only marginally in the self-evaluation of their own well-being. The most significant aspects concern health and personal relationships. More than 70% of respondents had no serious health problems. The factor which best reveals the perceived individual well-being is that relating to relationships. The respondents are very satisfied with their own networks of family and friends which serve to construct their social capital.

From the Concept of Quality of Life to a Synthesis Indicator: Towards the Construction of a Composite Indicator

The graphical representation of the higher-order perceived quality of life construct is reported in Fig. 1. It represents the structural model that has been developed in order to analyse the quality of life perceived by the citizens of the historic centre of

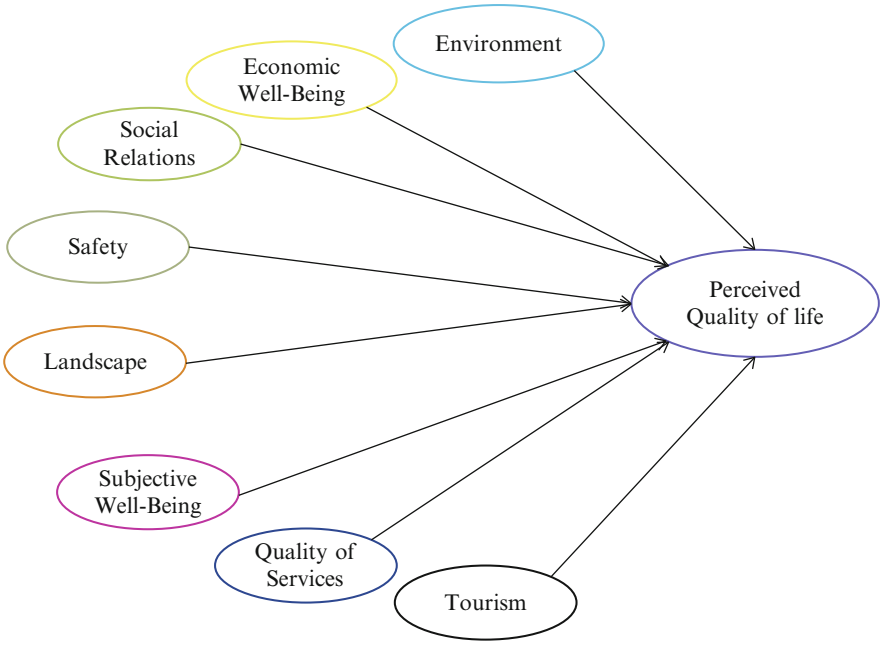

Fig. 1 PLS-PM structural model to analyse the perceived quality of life

Naples from different dimensions. This means that there is a formative relationship between the exogenous blocks and the endogenous block. It consists of 8 LVs, which represent the sections of the questionnaire, and 44 MVs, all measured on an ordinal Likert scale from 1 to 5. These LVs are linked to the higher-order LV "Perceived Quality of Life".

Before completing the PLS-PM analysis, a pre-treatment of the data was performed. First of all, the two scales were normalized with scores from 0 to 100 to make them homogeneous. Since the questionnaire was composed of items in a Likert Scale with a range from 1 to 5, the normalization made the data belonging to the different variables comparable. Next, the variables that had a low average and low correlation with the other variables in the block were removed from the analysis. The final database was composed of 44 variables on 312 individuals. The analysis was performed with a centroid scheme for the inner structural model, while the measurement model is reflective in each block. The reflective measurement model means that the LV is assumed to be a common factor that reflects itself in the MVs (Mode A). In the reflective case, the MVs should be highly correlated, due to fact that they are correlated with the LV of which they are an expression. In other words, the block should be homogeneous. There are several tools for checking the homogeneity and unidimensionality of a reflective block: Cronbachs Alpha; Dillon-Goldsteins Rho and Principal Component Analysis of a block. In this case all the blocks are unidimensional, as it is possible to verify from Table 2 in which the

Table 2 Block unidimensionality

LVs	Mode	MVs	Alpha Cronbach	Dillon Goldstein's Rho	First eigenvalue	Second eigenvalue
Environment	A	7	0.717	0.805	2.64	1.045
Safety	A	5	0.786	0.855	2.73	0.802
Economic well-being	A	5	0.705	0.758	2.17	1.011
Social relations	A	5	0.691	0.753	1.91	0.941
Landscape	A	7	0.805	0.858	3.26	0.982
Quality of services	A	5	0.767	0.742	1.57	0.707
Subjective well-being	A	5	0.724	0.820	2.40	0.904
Tourism	A	5	0.722	0.702	2.16	1.167

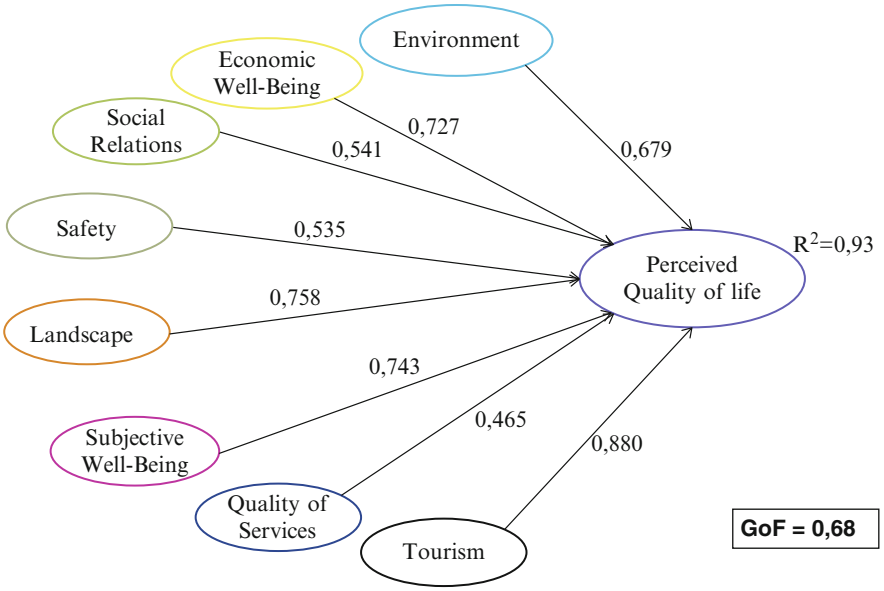

Fig. 2 Path coefficients and goodness of fit of a PLS-PM model to analyse the perceived quality of life

values of Cronbachs Alpha and Dillon-Goldsteins Rho are reported (the values of Dillon-Goldsteins Rho are greater than 0.7, and the first eigenvalues are greater than 1 for all LVs). This result shows that the outer model is well specified and that the LVs are well measured by the MVs, their synthesis being good.

The most interesting result of a SEM is the estimate of the values of the concepts of interest obtained through a weighting system assigned to both the indicators associated with each latent concept and the dependency network that links the different concepts to one another. A knowledge of these weights allows an evaluation of the influence of the different dimensions of the phenomenon on the final result. Figure 2 shows the value of the linear determination index $R2$ which

reveals the goodness of the model in predicting LV scores, indicating how much of the information in the questionnaire is well synthesized by the model. The value on the arrows represents the impact of each LV on the final block. The coefficient indicates that an increase by one point in the LV level leads to an increase in value in the quality of life index.

As we can see from the graph, the high $R2$ indices show a good predictive power for all structural relations; the questionnaire information, thus, is well synthesized by the model. From an analysis of the path coefficients it emerges that each dimension has a significant impact on the final block: it is noteworthy that they all have a high impact, with the exception of the blocks of Quality of Services (0.465), Safety (0.535) and Social Relations (0.541). Tourism has the strongest impact among all the dimensions, this meaning that this dimension is an important lever to increase the perceived quality of life. Table 3 presents the loading for each MV, that is the ordinary least squares coefficient of a simple regression of the MV on its LV, which describes how the MV reflects the corresponding LV.

The loading measures the contribution that each single indicator separately makes to the relevance of the construct with which it is associated. As can be noted from Table 3, for all the dimensions of the model, almost all the variables have a loading greater than 0.60, with the exception of some variables, in particular "Noise" and the "Possibility of parking" for the Environment, "Home" and "Income" for the "Economic well-being", "Political parties" for the Social relations, "Kilometres travelled per day" and "Use of subways" for the Quality of services, and the "Possibility of creating employment" for Tourism. These considerations are very useful in identifying the most critical points and thus establishing a strategy that improves the scales of dimensions and individual factors with respect to the perceived quality of life.

In Table 4 the impacts and means of each dimensions are reported.

It is important to emphasize that, in addition to verifying which dimensions have a greater impact on the quality of life, we should also take into account the average scores calculated for these blocks. Only the combined reading of these two pieces of information (impacts and average scores) allows us to identify the so-called levers for improvement, as it suggests in which critical areas it is recommended to intervene and with what urgency. A key characteristic of the PLS-PM method is the construction of a decision matrix. This matrix is a simple and valid tool to support the diagnosis and detection of such levers. It consists of a dispersion graph that allows each variable to be positioned based on the average score (coordinated on the x-axis) and on the estimated impact on the target LV (coordinated on the y-axis). The matrix is divided into four areas: the first area is the most critical area, because the variables have a high impact but a low mean value; the second is the area of the monitoring, in which the variables have a low value both for the mean and the path coefficient; the third is the area to be improved because the variables have a high mean value and a low path coefficient; finally, the fourth is the area to be maintained, in which variables have a high value both for the mean and for the path coefficient. Figure 3 show a decision matrix of the perceived quality of life.

Table 3 Measurement model estimates

LV	MVs	Loadings
Environment	Street cleaning	0.652
	Possibility of parking	0.449
	Noise	0.390
	Public lighting	0.698
	Protected areas	0.624
	Street furniture	0.680
	Housing	0.601
	Selling drugs	0.759
	Selling smuggled goods	0.757
Safety	Micro-criminality	0.786
	Racketeering, camorra	0.734
	Vandalism against private property	0.598
	Home	0.393
	Home size	0.855
Economic well-being	Home aesthetics	0.845
	Home location	0.733
	Income	0.220
	Associations	0.871
	Union	0.410
Social relations	Political parties	0.229
	Religious initiatives	0.558
	Voluntary work	0.559
	Ecological days	0.696
	Electric bus	0.676
	Free transport	0.474
Landscape	Garbage disposal	0.738
	Cleaning common area	0.774
	Upgrading street furniture	0.715
	Police controls	0.662
	Kilometres travelled per day	0.351
	Use of trams/bus	0.598
Quality of services	Use of subways	0.322
	Use of cycle lanes	0.425
	Health service	0.689
	Happiness	0.750
	Economic conditions	0.710
Subjective well-being	Health	0.775
	Free time	0.602
	Relationships with family members	0.599
	Increase in economy	0.510
	Not creating inconvenience for residents	0.671
Tourism	Possibility of creating employment	0.396
	Not making the neighbourhood dirty	0.695
	Facilitating a multi-ethnic society	0.786

Table 4 Impacts and means of each dimension of the model

LVs	Path coefficients	Mean
Environment	0.679	4.44
Safety	0.727	5.92
Economic well-being	0.541	5.61
Social relations	0.535	5.46
Landscape	0.758	7.58
Quality of services	0.743	6.90
Subjective well-being	0.465	4.72
Tourism	0.880	5.54

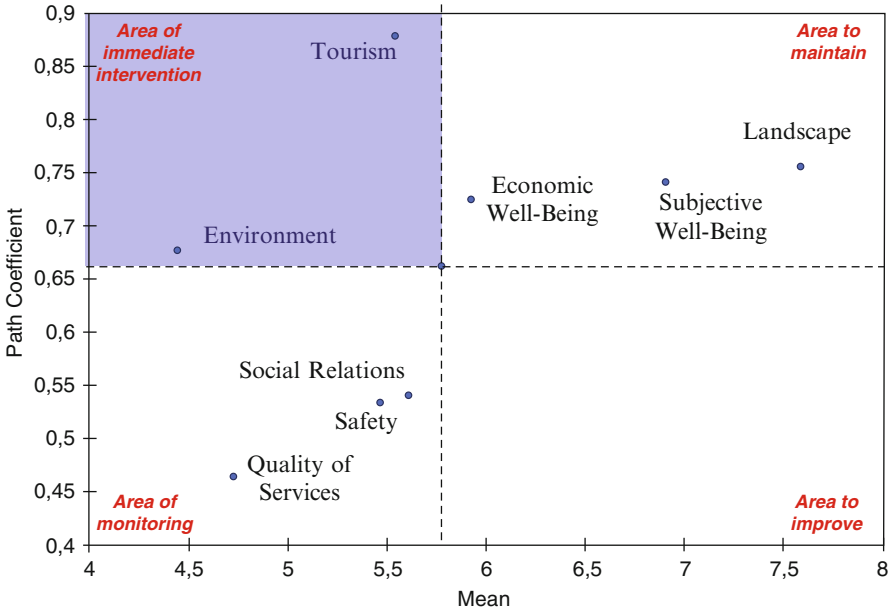

Fig. 3 The decision matrix of the quality of life

As you can immediately notice the dimensions of Tourism and Environment fall into the area of immediate intervention, as they have a very high impact but a low average. This means that these dimensions are two very important levers to increase the quality of life but, at the same time, they have obtained a low average rating from the citizens of the historic centre of Naples. They represent dimensions which need a great effort to be improved. It remains to be seen, however, if, in constructing this discourse, there can be a "voice" for all those Neapolitans whose quality of life is being affected by the future directions of the city.

Conclusions and Future Perspectives

The goal of this research has been to analyze the perceived quality of life in the historic centre of Naples by identifying the crucial aspects that influence and determine the level of well-being of individuals in this area of the city. The work is part of the project METRICS whose research area is the historic centres of cities. For this reason the statistical population forming the subject of this study has been the population of residents in this area of Naples, one of the most famous cities in the world. In this paper we have used Structural Equation Models, estimated using the Partial Least Squares-Path Modeling method, in order to understand how the various dimensions, considered in a questionnaire, can affect the well-being of the citizens and, above all, what dimensions should receive investment to improve the quality of life of the citizens of the historic area of the city. The results show that the dimensions of tourism and the environment are the two dimensions that need immediate intervention. This means that these dimensions are two very important levers to improve the quality of life but, at the same time, they have obtained a low average rating from the citizens of the historic centre. Indeed, the citizens declare little satisfaction with these two aspects of the city. This analysis is only a starting point, a first exploratory investigation of this issue. In the future, our intention is to extend the analysis to all citizens of the metropolis and above all to consider not only the perceptions of the citizens relating to these aspects but also to analyze objective indicators of each dimension. These are topics on which our research group is already working. Moreover, the idea is to propose this model with these dimensions to analyze the perceived quality of life in the historic centres of all the major Italian cities.

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