Economic Resourcefulness: Definition and Modeling

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Abstract

The amount of income earned, wealth and position in the labor market are determined by many factors. Numerous analyses indicate that these characteristics depend on, among others, gender, education, type of work and place of residence. The indicated factors, however, describe individual areas, which significantly hinders the comprehensive analysis and identification of the real determinants. In this context, the purpose of our analysis is to identify and characterize the concept of economic resourcefulness as a key factor conditioning people's effectiveness functioning on the market, managing the resources they possess, and having the ability to guarantee the economic security of their families. The empirical part of the analysis was carried out on data from a dedicated study conducted in Poland in 2016. Due to the design of the sample, the data from the study will identify the level of resourcefulness for groups of people that differ with respect to the respondents' age and experiences related to Poland's political transformation.

Keywords Economic resourcefulness · Wealth · Income · Economic security · Job satisfaction

JEL Classification D14 · J28 · D91 · I31

1 Introduction

Identification of the causes of diversity in the area of the economic characteristics and functioning of individuals on the market is one of the very important challenges of modern economics. Many factors have been identified in previous studies. On the one hand, these factors implicate personal characteristics, such as intelligence (see Hunter and Schmidt 1996; Schmidt 2015; Byington and Felps 2010), physical attractiveness (see Hamermesh and Biddle 1994; Mobius and Rosenblat 2006; Sierminska 2015), and personality traits (see Borghans et al. 2008; Bucciol et al. 2014). On the other hand, the conditions created by the socioeconomic system also have a significant impact.

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The research on the causes of this differentiation also concerns very detailed issues, showing the relationships among individual variables on the microscale. There is a wide body of literature showing the impact of personality traits and childhood experience on the level of income obtained (see Nyhus and Pons 2005; Gensowski 2018; Hardy 2014), the influence of personal characteristics on the amount of accumulated wealth (see Brown and Taylor 2014; Sierminska et al. 2010) and the relationship between self-esteem and work performed (see Chen and Lim 2012; Kammeyer-Mueller et al. 2008; Ferris et al. 2010).

However, these aspects of functioning in the area of economics—work, income and wealth—are usually analyzed separately. This observation also applies to situations in which potential factors that can condition a dependent variable (for example, income or assets) considered within a model as a potential independent variable (the relevance of which is to be determined by the analysis) in a multiple regression model. The factors analyzed are described by the values of various variables and do not represent one characteristic. Meanwhile, various manifestations of the effective functioning of individuals on the market, expressed by, *inter alia*, the ability to perform an appropriate (and adapted to one's own expectations) job, to achieve a high income and to secure the material conditions of their families, are closely related. In everyday language, this issue is described by the concept of “resourcefulness”, which is conceived as creativity and the ability to do well in life, which results in a high material status, an appropriate, satisfying and well-paid job, etc. We intuitively distinguish between resourceful and nonresourceful people. However, there are no tools that would allow for this distinction to be drawn in a formal way because the concept of economic resourcefulness has not yet been defined. Therefore, the aim of the analysis presented in the article is to propose a definition and description of how to model the concept of economic resourcefulness. The presented analysis will be illustrated with empirical results obtained for Poland, which will allow us both to assess the impact of selected factors on the level of economic resourcefulness and to identify its observable consequences.

The remainder of the paper is structured as follows. Section 2 presents an overview of ways in which the concept of resourcefulness is described and analyzed in the literature. The next three sections are devoted to the definition of the concept of resourcefulness (Sect. 3), its relation to other economic concepts (Sect. 4) and how it is modeled (Sect. 5). Section 6 presents the scope of the empirical analysis and the data used, which together form the basis of the analysis. The results of economic resourcefulness modeling are presented in Sect. 7. Section 8 concludes.

2 Resourcefulness in the Literature

Resourcefulness has not yet been analyzed in the economic literature in a way that directly reflects its intuitive understanding in a manner that is adequately wide. Referring to the colloquial meaning of the concept of resourcefulness, the most important dictionaries define it as “the ability to find quick and clever ways to overcome difficulties” (<https://en.oxforddictionaries.com/>) and “the ability to make decisions and act on your own” (<https://dictionary.cambridge.org>). This definition suggests that the individual possesses certain features that, on the one hand, allow for her (him) to overcome difficulties and, on the other hand, give him or her the ability to act in a way that guarantees success and well-being. Therefore, in an economic context, resourcefulness is associated with “having the mental strength, potentials, talents, and finance” (Gora 2012, p. 31) that allow a person to adequately secure both his or her own future and the future of her (his) family. In this form, resourcefulness has

not been explicitly defined in the literature. However, before we attempt to define resourcefulness in this way in the next section, we will present some ways in which resourcefulness is described in the medical, psychological and management sciences.

The first dimension of resourcefulness is personal resourcefulness, which defines the ability to secure one's own living needs by children, the elderly, disabled or sick. Simultaneously with personal resourcefulness, social resourcefulness is defined as the ability to obtain help in this area when it is not possible to secure one's specific living needs on one's own (Zauszniewski and Bekhet 2011).

The second context in which the concept of resourcefulness is used is learned resourcefulness, which is the ability to control and self-limit (for example, emotions) and enables the efficient implementation of planned activities (see Cilliers and Coetzee 2003; Rosenbaum 1990). The adjective "learned" underlined in this term indicates the acquired (and not innate) nature of the limitations thus described.

Among the ways of grasping the concept of resourcefulness present in the literature, the closest to the proposed concept of economic resourcefulness is that of entrepreneurial resourcefulness, i.e., the ability to identify opportunities and their use. Understood in this way, resourcefulness constitutes a base for running one's own business and achieving success in one's field. However, it is understood quite narrowly, i.e., in the context of running a business, which is clearly indicated by survey questions that were formulated to identify it (Robinson et al. 1991).

A notion that does not refer directly to resourcefulness but is used in a similar context is that of resilience, which means the strength to overcome the limitations imposed by life. The concept of resilience focuses on explaining the phenomenon of some individuals' good functioning despite unfavorable living conditions, adversity or traumatic events (see Rutter 1987). In this way, resilience means the strength to overcome the limitations imposed by life. Most definitions of resilience are based on two core concepts: adversity and positive adaptation. The category of resilience has been identified in research on diseases, violence, poverty and unemployment: it was noticed that some individuals analyzed were more resistant to adverse events (see Fletcher and Sarkar 2013 for a review). Some authors underline that resilience is a capacity that develops over time in the context of person-environment interactions (see Egeland et al. 1993), which to some extent approaches resilience as the concept of learned resourcefulness.

3 Concept of Economic Resourcefulness

Based on the considerations presented above, resourcefulness (in each of the previously presented approaches) concerns the selected aspects of the functioning of individuals. Therefore, when approaching the definition of resourcefulness in economic terms (economic resourcefulness), the first step is to indicate a reference point in relation to which this concept will be defined. When analyzing various aspects of the functioning of individuals and their families, one promising reference point seems to be economic security. This concept refers to the possibility of guaranteeing a relatively stable standard of living and applies not only to poor families (for them, the analyses are usually conducted in the context of the risk of poverty) but also to more affluent families. In the latter case, the problem is not necessarily the risk of poverty, but a significant reduction in the standard of living. This risk was particularly noticed in the last decade—in the context of the disappearance of the middle class and the financial

crisis, which began in 2008.¹ Both for poor and for more affluent families—one important characteristic of the family or individual becomes the capacity of limiting this risk through appropriate actions. Therefore, assuming that the possibility of guaranteeing (increasing) economic security (of individuals and their families) is conditioned by certain characteristics, we obtain a natural space for the concept of economic resourcefulness.

Therefore, the basic reference point for the concept of economic resourcefulness is the family's economic security. In this context, economic resourcefulness will mean the ability to make the economic decisions necessary for ensuring economic security both for oneself and for one's family. The concept of resourcefulness is a logical explanation of the perception of economic security. It differs from concepts such as creativity (the ability to perceive the world in new ways, to find hidden patterns, to make connections between seemingly unrelated phenomena and to generate solutions—see Csikszentmihalyi 1996) and resiliency (defined as the process of recovering from difficulties—see Luthar et al. 2000), although it is sometimes related to these concepts: these types of features and skills are useful for guaranteeing the family's economic security. Nevertheless, ensuring the family's economic security does not require creativity but resourcefulness: i.e., the ability to find a suitable, satisfying and well-rewarded job and building up resources that protect the family against adverse events. Resourcefulness has to protect the family against difficulties; thus, it cannot be identified using the concept of resiliency. Resourcefulness manifests in the ability to find a job, to choose a career path that gives a stable income to ensure that one's needs are satisfactorily covered and to manage money in a rational and future-oriented way.

Understood in this way, resourcefulness is not a feature that can be subject to direct observation, and therefore, the description of this concept requires us above all to indicate the observable consequences of resourcefulness. As indicated above, the result of resourcefulness is the family's economic security, which provides the opportunity to meet the family's needs at a level that satisfies it or improves its quality of life (including, for example, the possibility of improved health) and invests in the development and education of children. That is why the appropriate skills of adult family members are a manifestation of resourcefulness. These skills are related to several key areas. First, an economically resourceful person has a good, suitable job, adequate to the expectations and education of a given person. Special areas that may be subject to analysis in the process of assessing the work performed include overeducation and underemployment problems (see McGuinness 2006; Wilkins 2007), professional achievements (see Heckman et al. 2006), job satisfaction (see Saari and Judge 2004) and one's history of employment and job changes (see Cohn et al. 2016). Second, the resourceful person has the ability to guarantee the stability of his or her source of income (see Kośny and Piotrowska 2013), an appropriate income level, and the ability to manage the family's financial assets of the family by investing cash surpluses, guaranteeing the appropriate structure of the asset portfolio (how much and in what to invest), and avoiding ill-considered, emotionally influenced purchases (see Kassarian 1971; Wood 1998; Sofi and Nika 2016). Third, economic resourcefulness is reflected in a sufficiently high material status² (manifesting, among others, in savings): these aspects positively influence the

¹ Numerous articles have been devoted to the definition and measurement of economic security—see, for example, Hacker et al. (2014) (where in addition to the measurement method, the authors present a review of the literature on this subject) and Osberg and Sharpe (2014).

² A separate issue is the matter of status consumption (see Eastman et al. 1999), which serves to show one's material position. This kind of consumption, if it threatens economic security (through, for example, excessive spending and excessive indebtedness), may prove to be a factor negatively affecting the level of economic resourcefulness.

level of economic security (see Hacker et al. 2014). Fourth, the ability to limit the adverse consequences of future events should be recognized as an effect of resourcefulness. This is reflected in both insurance and the ability to build interpersonal bonds (which can be understood in terms of social capital—see Martin et al. 2004; Babicky and Seebauer 2017).

In the context of defining the concept of resourcefulness, of particular importance is the identification of economic resourcefulness' determinants. This is much more troublesome—as the research results show, the determinants of people's behavior have an extremely complex character (see Gastil 1961). However, the attempt to identify factors affecting observed economic resourcefulness not only is interesting from the cognitive side but also has significant practical significance: it can be a very important indicator in the process of shaping economic education and supporting appropriate attitudes, positively affecting the level of economic security of households. This indicator allows us to answer the question of how resourcefulness is conditioned by cognitive and noncognitive factors and the extent to which it is shaped in the learning process (see resilience and learned resourcefulness).

When looking for potential determinants of economic resourcefulness, one should first consider personality traits (Big Five—see Costa and McCrae 1992; Gosling et al. 2003) that have proven to be an important determinant of people's behavior in areas related to economic performance (see Borghans et al. 2008 for a critical review).

A broadly accepted taxonomy of personality traits in the empirical economics literature classifies individuals according to five factors: extraversion, agreeableness, conscientiousness, neuroticism (emotional instability) and openness to experience. Following Caliendo et al. (2014), extraversion is connected to being assertive, dominant, ambitious and energetic; agreeableness is connected to being cooperative, forgiving and trusting; conscientiousness is connected to the two aspects of being achievement-oriented and being hard-working; emotional stability is connected to being self-confident, optimistic and able to deal with stressful situations; and openness to experience is connected to an individual's creativity, innovativeness, and curiosity. This paper is particularly interested in revealing whether personality traits, as the determinants of economic resourcefulness, contribute to person-job fit, earnings, savings and wealth.

Despite the fact that the relationship between household finances and personality traits has attracted limited interest in the literature, some personality characteristics have been identified as important determinants of aspects of individual and household finances. Brown and Taylor (2014) found that personality traits such as extraversion and openness to experience exert relatively large influences on household finances in terms of the levels of assets and debt held. In contrast, personality traits such as conscientiousness and neuroticism appear to be unimportant in influencing the levels of unsecured debt and financial assets. Donnelly et al. (2012) reported that extraversion and conscientiousness are significant predictors of money management and financial management behavior.

Brunello and Schlotter (2011) also point out the relative scarcity of empirical studies that consider the labor market effects of noncognitive skills. Nevertheless, the recent empirical literature, both in the USA and in Europe, supports the view that a certain level of noncognitive ability is a prerequisite for avoiding failure in the labor market. For example, Nyhus and Pons (2005) report that there is evidence of a positive association between emotional stability and wages, while both extraversion and agreeableness are negatively related to earnings.

The second important area is declared values. As the research suggests, declared values are crucial to occupational trajectories and achievements (see Bengtson et al. 2002), which are directly related to the possibility of guaranteeing the family's economic security. Studies of life values presented in the literature demonstrate that materialists behave more irrationally: for example, they incur higher debts (Watson 2003) and make more compulsive purchases (Roberts et al. 2003) than nonmaterialists. Donnelly et al. (2012, p. 1138), investigating the relationship between money management and the individual components of materialism, found that "a specific facet of materialism (believing that material possessions can provide happiness) is a consistent driving force behind the negative impact material values has on money management".

The third area, the importance of which is crucial in the context of the ability to obtain a suitable job, is the subjective perception of self-worth (see Bengtson et al. 2002). Self-esteem can be one of the determinants of economic resourcefulness for two reasons: first, it helps in defining one's career path, and second, it helps one to deal better with inequalities at work. Persons with higher self-esteem make their career path choice earlier. Resnick et al. (1970) found that high self-esteem persons expressed greater certainty about their career choices than low self-esteem persons. Similar conclusions were drawn by Chiu (1990). His research revealed that adolescents with some career goal tend to have higher self-esteem than those without an idea of what they want to do in the future. The second argument for including self-esteem in the list of potential determinants of economic resources is the results of research on the relationship between self-esteem and inequality in working conditions. Abraham (1999) found that persons with low self-esteem show higher aversion to inequity in working conditions. Low self-esteem employees experience greater job dissatisfaction and a higher propensity to turnover than those with high self-esteem. Alavi and Askaripur (2003) found that high self-esteem individuals are more satisfied in their jobs.

The fourth group of determinants concerns family relations and the presence of parents in the child's life (in particular, the lack of a father or mother³), migration, and the level of parental involvement in child raising (see Keister 2004; Furstenberg and Kiernan 2001), all of which may be potentially very important for economic resourcefulness.

The importance of family ties is related to cognitive abilities. Cognitive abilities (and skills) are usually identified with intelligence and the ability to solve abstract problems, and these abilities are included in the paper indirectly, via family background: differences between children in cognitive skills are apparent very early in life and are strongly correlated with family background. Although general intelligence can be explained (to some extent) by genetic factors, Heckman and Mosso (2014) argue against placing too much stress on pure genetics and instead suggest paying more attention to socioeconomic status because the expression of genes depends on the environment (for example, the impact of early childhood environment on educational attainment and adult outcomes was described by Currie and Almond 2011). Considering that economic resourcefulness is an aspect of human capital, this paper draws from many studies devoted to the role of the family in shaping children's human capital (see literature reviews on the subject: Björklund and Salvanes 2011; Currie and Almond 2011; Heckman and Mosso 2014). Carneiro et al. (2013), showing significant intergenerational returns from education, also emphasize the

³ From the point of view of shaping one's economic behavior, of particular importance is parental divorce or separation, which increases the likelihood of enduring economic hardship. This fact can lead to lower income and decreased asset accumulation in adult life (Fagan and Churchill 2012, p. 31).

importance of time devoted to the child by his or her parents. Berger et al. (2009) draw attention to income as an important factor in strengthening the positive impact of parenting skills. Del Boca et al. (2014) propose a model that combines family decisions regarding labor supply with time and money spent on child development.

Of course, the identification of areas does not explicitly determine how to model the variables that will represent them in the model. Due to the limited amount of information available, it is not possible to describe all potentially relevant aspects, which is also a common feature of models. Therefore, the actual scope of the empirical analysis must always reflect the specifics of the population for which the analysis is carried out, emphasizing the factors of particular importance.

4 Relation of Economic Resourcefulness to Other Concepts in the Economic Literature

The proposed concept of economic resourcefulness is related to many notions that are considered in the field of economic sciences. In particular, it relates to concepts such as entrepreneurship, human capital, human development, and capabilities.

Considering the similarities and differences between the proposed concept of economic resourcefulness and other concepts, it is worthwhile to start with the notion of entrepreneurship proposed by Schultz (1975). When considering the ability to deal with disequilibria as an extension of the concept of entrepreneurship, Schultz (1975) begins with the person's ability, which he defines as "the competence and efficiency with which particular acts are performed" (Schultz 1975, p. 828). He mentions the following classes of abilities: (1) to learn; (2) to do useful work; (3) to play; (4) to create something; and (5) as especially important in extending the concept of entrepreneurship, the ability to deal with economic disequilibria. Emerging difficulties and challenges can be interpreted in the context of disequilibria and achieving an equilibrium as a process that requires time. The manner of behaving and proceeding at this time depends on efficiency in responding to any given disequilibrium and on the costs and returns of the sequence of adjustments available to them (Schultz 1975, p. 829). In this respect, Schultz's concept is directly connected with the concept of economic resourcefulness: entrepreneurship is the ability to adjust or reallocate resources in response to changing circumstances.⁴ Both entrepreneurial ability and economic resourcefulness increase the efficiency of equilibrating activities. Furthermore, both represent forms of human capital. In addition, similar to other forms of human capital, economic resourcefulness can be increased through education, training, experience, health care, and so on.

There are, however, differences between Schultz's concept and economic resourcefulness that determine the important divergence of these two concepts. The fundamental difference between Schultz's concept of entrepreneurship and the proposed concept of economic resourcefulness is that entrepreneurship is understood as dealing with changes in economic conditions as modernization proceeds (Schultz 1975, p. 837), while economic

⁴ Such entrepreneurship is an aspect of all people's behavior. In contrast to the concept of entrepreneurship in the management literature (Begley and Boyd 1987; Chandler and Jansen 1992; Lumpkin and Dess 1996), in which entrepreneurship is understood as a specialized activity performed by a class of specialists, Schultz's concept of entrepreneurship applies not just to businessmen but to everyone who is in the act of reallocating their resources. By analogy, the concept of economic resourcefulness also applies to all people.

resourcefulness also denotes dealing with changes in economic conditions when the primary aim is not to adapt to continuing modernization but to ensure the economic security of the person and his (her) family. Therefore, in contrast to entrepreneurship, economic resourcefulness is not itself traded and priced on the market (Schultz 1979 insists that entrepreneurial ability, similar to other services available for hire, is a resource with a market price and quantity). While the result of entrepreneurship is the optimal use of resources to maximize income (rationalize the consumption), the expected gains from economic resourcefulness are composed not only of an improvement in income but also of matching one's skills and the requirements of work (which increases the probability of job satisfaction and stabilization), improving money management, accumulating wealth, insuring oneself and one's valuable assets, and avoiding compulsive buying. These gains from economic resourcefulness are simultaneously dimensions of economic security.

The issue of economic resourcefulness clearly refers also to the notion of capabilities proposed by Sen (1985). Sen criticizes the traditional approach to the assessment of human well-being and development both in terms of utility (understood as happiness, desire-fulfillment or choice) and in terms of resources (defined as income, commodity command or entitlements). Sen (1984, p. 512) reminds us that happiness or desire-fulfillment represents only one aspect of human existence and there is more to life than achieving utility. Referring to the resource-based approach, Sen (1999, pp. 70–71) draws attention to the fact that some people can live substantially better (achieve more) than others with a given bundle of goods and services, and therefore, the resource-based approach provides an incomplete guide to well-being. For this reason, Sen proposes the capability approach and defines a person's capabilities as "the alternative combinations of functionings that are feasible for [him or] her to achieve (Sen 1999, p. 75). In this context, functioning is defined as "an achievement of a person: what she or he manages to do or to be" (Sen 1985, p. 12). A functioning relates to the use that a person can make of the commodities and characteristics at his or her command (Clark 2005, p. 1345). Any account of human well-being and development (compatible with Sen's framework) can be viewed in either the functioning or the capability space (Clark 2005, p. 1344). In relation to Sen's concept of human well-being (which bridges resources and functionings), economic security refers to two basic resources: money and work. Functionings relate to the use that a person can make of these two resources. In the case of money, they include spending money (buying goods and services), saving and investing (buying financial products, assets). Regarding the second resource (work) they include undertaking paid work (including the choice of a specific position or industry sector), self-employment or working in a household. In this context, a person's capabilities are the alternative combinations of these functionings. Economic resourcefulness is, however, a factor that, by improving the allocation of resources, extends a set of opportunities to choose, thus affecting the increase of a person's capabilities that enable him (her) to provide higher economic security both to him (her) self and to his (her) family.

The third area to which the concept of economic resourcefulness refers directly is human development. Alkire (2002) analyzes a series of sets of items that different authors have mentioned as ingredients of quality of life, basic human needs, elements of the utility vector, aspects of well-being and universal human values. These lists cover the dimensions (component aspects) of human development. By human development, Alkire (2002, p. 182) means human flourishing in its fullest sense. One of the approaches described by Alkire is "A Theory of Need" proposed by Doyal and Gough (1991). Their theory defines universal needs as a precondition for social participation that apply to everyone in the same way. They identify two universal "basic needs": physical health and autonomy. "To be

autonomous [they mean] is to have the ability to make informed choices about what would be done and how to go about doing it. This entails being able to formulate aims, and beliefs about how to achieve them, along with the ability to evaluate the success of beliefs in the light of empirical evidence” (Doyal and Gough 1991, p. 53). While basic individual needs for physical health and autonomy are universal, most of the goods and services required to satisfy these needs are culturally variable. Doyal and Gough (1991) call objects, activities and relationships that satisfy basic needs “satisfiers” and define the notion of “universal satisfier characteristics” as that set of all characteristics that have the property of contributing to the satisfaction of basic needs in all cultures. Such defined universal satisfier characteristics serve as the crucial bridge between universal basic needs and socially relative satisfiers, and therefore, in the Theory of Needs, they are called “intermediate needs”. Doyal and Gough (1991) group these intermediate needs into eleven categories. The last five, including but not limited to economic security, a secure childhood, significant primary relationships and physical security, contribute universally and positively to autonomy.

In this way, economic resourcefulness as the ability to economic decision making necessary for ensuring one’s own economic security and the economic security of one’s family contributes to personal autonomy because it increases “the ability to make informed choices about what would be done and how to go about doing it” (Doyal and Gough 1991, p. 53). Thus, economic resourcefulness is one of the components determining human development.

5 Modeling Economic Resourcefulness

The conceptual model shows that resourcefulness is not a feature that can be observable directly. Therefore, it will be modeled as a hidden variable. Assuming this, the natural area of searching for the proper method of analysis is structural equations modeling (SEM; see Arbuckle 2011; Barrett 2007). Structural equation modeling provides a very general and convenient framework for statistical analysis that includes several methods (even regression models can be analyzed using path models as a special case of SEM). However, the characteristic aspect of SEM is that it allows for scientifically meaningful assumptions to be made explicit in a mathematical language (what is not part of standard statistics—see Bollen and Pearl 2013, p. 312).

The choice of a particular modeling method is conditioned, however, by the specificity of the issue under consideration. In typical SEM models, the latent structure is analyzed, describing the relationships between several hidden variables (where for each latent variable a measurement model is defined by multiple observable indicators). In the case of the analyzed concept of economic resourcefulness, the situation is slightly different. The sole unobservable variable is economic resourcefulness, and there is no need to describe the latent structure: the purpose of modeling is to identify statistically significant factors that determine the level of economic resourcefulness and the areas in which economic resourcefulness manifests itself. In this context, the most adequate model seems to be the MIMIC (Multiple Indicator, Multiple Cause), which is a special case of structural modeling: this model considers both effect indicators (reflective indicators) and cause indicators (formative indicators). Due to such a mixed approach, the model allows for the consideration of both the causes and the consequences of economic resourcefulness (the latent variable).

Of course, similar to in the case of other variants of econometric modeling, the analyzed model does not allow us to “prove” the causality of the observed relations by means of a

simple “recovering” of patterns written in the dataset (in this sense, it merely confirms the cooccurrence of certain features or phenomena). The empirical confirmation of the correctness of the conceptual model (good fit of the whole model and statistical significance of its parameters), done by means of the confirmatory analysis, will, however, be interpreted as confirmation of the existence of a relationship—even if it is impossible to equivocally determine causality (see Bollen and Pearl 2013 for a review of discussion on the causality of SEM).

The main advantage of the SEM (MIMIC model) is its simultaneous analysis of multiple dependencies between both observable and latent (reflecting the characteristics for which direct observation is not possible) variables. The use of this type of modeling will allow for direct introduction into the model of variables reflecting economic resourcefulness and therefore the identification of their relations to other variables. The use of noninformative prior distributions and Bayesian estimation will allow for a considerable reduction in the number of assumptions required to be made during the construction and estimation of the model. This reduction will thereby minimize the extent of dependencies that are to be made in advance and focus on the relationships resulting from the collected data.

In the area of structural modeling, numerous methods have been proposed for assessing the quality of a model. Usually, the model is considered sufficiently good when it meets several criteria. Therefore, in the empirical analysis, which will be presented later in the article, the two most popular methods will be used to assess the fit of the analyzed model. The first is the Steiger-Lind test, based on root mean square error of approximation (RMSEA) values. The models for which the RMSEA takes values of less than 0.05 will be considered well suited (Browne and Cudeck 1993; see also Hu and Bentler 1999 for comparison of rejection rates for different RMSEA cutoff values and different sample sizes: taking account of the size of samples analyzed in the empirical part, this level guarantees satisfactory rejection rates). As the second criterion for the model fit, we took the value of χ^2/df statistics, describing the difference between the observed covariance matrix and that implied by the model divided by the number of degrees of freedom of the model. For models considered to be well-fitted, this statistic should be below 2 (see Byrne 1989).

6 Scope of Empirical Analysis and Data Used

The analysis presented in the empirical part aims at the initial identification of the concept of resourcefulness: an indication of its determinants and consequences. To enable the widest possible examination of this issue, the analysis will be carried out in two dimensions. The first of these will be the identification of the impact of a specific respondent's characteristics on those aspects of functioning that are associated with economic resourcefulness. The second dimension is the analysis of the influence of characteristics of the respondent's parents on the economic resourcefulness of the respondent. This will allow for us to identify the basic mechanisms of the intergenerational transmission of specific features and attitudes. The specificity of the data that is necessary to evaluate such a mechanism (for example, regarding personality traits) requires that the data come from the direct examination of a given person (in this case, the respondent's parent).

Therefore, the assessment of economic resourcefulness and its causes requires an appropriate dataset. Due to specific requirements regarding the need to include data on income, assets, situation in the labor market, value systems and personality traits, along with analogous

information about parents, it is necessary to use (at least at this stage of research) a dataset from a dedicated study. However, it is worth emphasizing that after the initial identification of significant areas, it will be possible to try to use standard datasets—primarily panel datasets (such as SOEP or Understanding Society, which gather a great deal of information from many areas, and EU-SILC, allowing for direct international comparisons).

In this article, the empirical analysis of resourcefulness will be limited to a specific group of people: Poles with a tertiary education aged 25–45. The group thus constructed is relatively homogeneous, although it includes people with very different experiences with respect to the economic transition that took place in the early 1990s. The oldest of the group were entering the labor market then, while the youngest were just born. These youngest appeared on the labor market after the transformation, when Poland was already a member of the European Union (this aspect of experiences related to political and economic transformation will be considered in the empirical analysis). The inclusion of relatively young people in the study allowed for surveying of their parents. Additionally, the combined analysis of the respondent's characteristics and the characteristics of the respondent's parent enabled the identification of intergenerational relationships, which is one of the aims of this study.

The observation unit in the survey that was used for the analysis is a two-generation family consisting of (1) a respondent (an adult aged 25–45 who graduated from a university-level institution), and (2) her/his parent (mother or father). Interviews were carried out using the computer assisted personal interview (CAPI) method on a nationwide, random-quota sample. Because of the criteria used for selecting the respondents (age range, higher education, and having their own family), the appropriate subgroups are representative only for the respective subpopulations (with respect to marginal distributions) due to voivodship, age and gender.

The official Polish system of household records (TERYT) was used to draw the sample. The same system is used for representative surveys conducted by the Central Statistical Office (but the study was conducted by an independent, reputable research agency). This allows for the generalization of the results to considered parts of the population.

The overall sample size (respondents and their parents) is 1804. They are divided into two subsamples of two-generation families. The first one consisted of 902 adult children and the second one consisted of 902 parents (mother or father) of the respondents belonging to the first subsample.

The characteristics controlled during the study were the share of participants (adult children) living with their parents, which was approximately 17% (according to the results of the 2011 Census—see Central Statistical Office 2014, Table 11). Meeting this requirement was necessary due to the specificity of the purpose of the research (assessment of resourcefulness) and the relative ease of conducting interviews with a child and parent who live together.

7 Economic Resourcefulness: Empirical Analysis for Poland

7.1 General Remarks

When attempting the operationalization of the previously characterized concept of economic resourcefulness, it should be emphasized that a basic unit of analysis requires a clear indication. Economic resourcefulness can be at least theoretically considered at two levels: as a feature of an individual or as a feature of a family (household). The latter approach can be justified by the fact that many features, especially those related to economic efficiency (i.e., assets owned, material status and so on) are those observed at the household level. Nevertheless, it

seems much more reasonable to conduct an analysis at the level of individuals: the characteristics conditioning resourcefulness and many of its manifestations (including, for example, suitable work or income level) are observed for people, not households. However, this approach has some shortcomings. As mentioned above, in the case of the joint property of two or more people, it is difficult to indicate the parts belonging to each of them. Therefore, further analysis from the point of view of individuals will be partly burdened with ambiguity resulting from the common household ownership of goods. In addition, we have to assume that the survey respondent's characteristics and activity determines household wealth (i.e., household wealth is not solely determined by the other household member).

Modeling economic resourcefulness while describing the consequences (manifestations) of resourcefulness, we focused on three main areas. The first of them is work. To characterize the aforementioned, various aspects of work, including job satisfaction, atmosphere at work, adequacy of work for one's skills and education level (risk of overeducation) and adequacy of working time (risk of underemployment), we decided to use the answer to a single question: Would you describe your job as "good" (suitable)? Answering this question, respondents declared their subjective evaluation of the work performed. An open issue is the relation of such an assessment to various detailed, objectified aspects of the work: these issues will be the subject of further studies. The use of a single question, however, allows us to show in a synthetic way the essence of the analyzed phenomenon.

The second aspect considered was the subjective assessment of income stability. This is an area that is particularly important from the point of view of the family's economic security. The variable describing it also has the character of a subjective assessment (this is the answer to the question, Did you feel in the last month that your source of income is unstable and uncertain?). As in the case of work, the objectified assessment of this aspect is also extremely problematic because it must consider many factors of a micro- and macroeconomic nature.

The third area reflected in the assessment of economic resourcefulness is household wealth. To describe this, we decided to include two variables: a subjective assessment (as an answer to the question, How would you rate the level of your wealth compared to the total population of your city?) and an objectified characteristic, describing the level of savings accumulated by the household (this level was declared by the respondent as an answer to the question, What is the approximate value of your household savings?). Both variables refer to the same area, and therefore, we can expect a significant correlation between their measurement errors (see Hermida 2015).

The fourth area relates to the ability to protect against the consequences of adverse events and is described by the propensity to insure. The variable indicating whether the respondent and her (his) household use insurance, however, turned out to be statistically insignificant in all the models considered. This may mean the actual lack of significance of this aspect (if the result is confirmed for other data sets), but it may also be related to the insurance market, which is considered relatively underdeveloped in Poland (see Central Statistical Office 2017).

The choice of features that affect the level of economic resourcefulness and that are modeled as formative indicators is definitely more arbitrary. In the presented model, we will adopt the features allowing us to refer to the areas characterized above when we defined economic security.

The first of these areas are personality traits: extraversion, agreeableness, conscientiousness, neuroticism (emotional stability), openness to experience (Big Five). Their evaluation is based on the Ten Item Personality Inventory (TIPI), whose Polish translation and the verification of its adequacy have been proposed by Sorokowska et al. (2014). The second area includes the respondent's self-assessment. This assessment was based on a series of

questions proposed by Bengtson et al. (2002). These questions allow us to determine the level of self-esteem both in relation to others (the statement that I am able to do things as well as most other people) and in a manner not directly related to other people (the statements that I feel that I have a number of good qualities, I feel I do not have much to be proud of and On the whole, I am satisfied with myself). The third area concerns the values the respondent follows in life. A set of questions also proposed in Bengtson et al. (2002) was used to identify those values. A detailed record of the questions, possible answers and their representation in the analysis is presented in “Appendix”.

All these areas are potentially very important for economic resourcefulness. Personality traits characterize predispositions to specific behaviors, which are then modulated by professed values. Self-esteem can also be considered a catalyst for actions taken.

Factors determining economic resourcefulness will be considered in two ways. In the first model, we consider only the characteristics of a respondent. In this case, both reflective and formative indicators describe the same person. In the second model, the economic resourcefulness of a respondent (and its consequences, reflective indicators) is conditioned by the relevant characteristics (formative indicators) of the respondent's parent.

We must emphasize here that it is possible to introduce many other explanatory factors to the model that would allow us to better explain the mechanisms of shaping economic resourcefulness. Most of these types of categories (such as the aforementioned ability to manage personal finances and the rationality of consuming or postponing certain activities) would have to be modeled by means of latent variables. This would lead to a very large increase in the number of components (paths) in the model and problems with the identification and stability of parameter values. Furthermore, all these categories are ultimately reflected primarily in income and wealth status as a directly observable effect. Therefore, we decided to concentrate on the main areas that seem to be the most important from the point of view of the preliminary definition of the economic resourcefulness, leaving detailed aspects for further analysis.

7.2 Results for the Generation of Adult Children

The theoretical model, characterized in the previous section, became the basis for the construction of a structural equation model. Due to the multiplicity of dependencies considered in these types of models, the most convenient way to present them is in graphic form. The structure of the one-generational model (for respondents, i.e., the children in the dyads surveyed) is presented in Fig. 1.⁵ The latent variable denoting economic resourcefulness is presented in the form of an ellipse. Observable variables, corresponding to the previously indicated questions, are presented as rectangles. Variables E0-E4, drawn as circles, indicate corresponding measurement errors. The values on the arrows mean estimated values of the model parameters (regression weights and correlation values). The model⁶ in the form presented in Fig. 1 proved to be best suited to the empirical data from the analyzed

⁵ The estimation of structural models was done in IBM SPSS AMOS 24. Figures 1 and 2 were prepared using this software.

⁶ Formally, the MIMIC model can be defined by regression equations (Wang and Wang 2012): $\eta = \beta X + E_0$ and $Y = \lambda \eta + E$, where η represents the latent variable, and X and Y are vectors of variables denoting causes and indicators, respectively (displayed as rectangles in Fig. 1, 2); β and λ are vectors of regression coefficients (displayed on arrows in Figs. 1, 2, and presented in Tables 1, 2); and E_0 and E are variables denoting error terms (displayed as circles in Figs. 1, 2).

Fig. 1 Economic resourcefulness: one-generational model. *Source:* Own elaboration

variants: different possibilities of description were considered, which were possible using variables characterizing personality traits, values in life, self-esteem and family situation (on the side of reflective indicators, we additionally analyzed insurances, but this variable, as mentioned above, turned out to be statistically insignificant).

Due to the nature of the variables that were used as the cause indicators, the most justifiable way to include them in the final model was to identify those aspects that guarantee the best fit of the model to the empirical data. This allows us to identify these personality traits and aspects of self-esteem that are key to shaping economic resourcefulness. Potential attempts to aggregate variables within domains (personality traits, self-esteem, values in life) would lead to results that have an ambiguous interpretation.

Single-headed arrows show the assumed direction of influence, while double-headed arrows indicate covariances without a causal interpretation. Values on the single-headed arrows (paths) represent regression coefficients, and values on the double-headed arrows represent correlation coefficients. The same values are reported in Table 1 (in the Estimate column), along with corresponding standard errors and *p* values.

The values of fit measures obtained for the model shown in Fig. 1 ($\chi^2/df=0.597$, $RMSEA=0.000$) lie significantly below the previously indicated maximum values and indicate a good fit. In addition, all the estimated parameters turned out to be statistically significantly different from zero at $p<0.02$). The estimator values presented in Fig. 1 and Table 1 were obtained using the maximum likelihood method. To assess the stability of the obtained solution and its independence from the adopted assumptions, we re-estimated the

Table 1 Economic resourcefulness, one-generational model—estimation results. *Source:* Own calculations

Regression weights			Estimate	Standard error	P
Structural equations for the latent variable economic resourcefulness (cause indicators)					
Economic resourcefulness	←	Emotional stability	0.178	0.038	0.000
	←	I appreciate: professional career	0.454	0.058	0.000
	←	Raised without a mother	−1.372	0.218	0.000
Measurement model for the latent variable economic resourcefulness (effect indicators)					
Savings	←	Economic resourcefulness	0.958	0.087	0.000
Wealth	←		0.356	0.03	0.000
Stable income	←		0.282	0.021	0.000
Suitable job	←		0.618	0.048	0.000
Covariances			Estimate	Standard error	P
I appreciate: professional career	↔	I can work as well as others	0.178	0.025	0.000
Emotional stability	↔	Raised without a mother	−0.021	0.009	0.019
	↔	I appreciate: professional career	0.183	0.036	0.000
	↔	I can work as well as others	0.229	0.036	0.000
E4	↔	E3	0.172	0.062	0.005

model with a Bayesian estimation using non-informative prior distributions. The obtained results confirmed a good fit of the model (convergence statistic very quickly tending to (1) and posterior predictive probability of $p=0.7$. The obtained regression weights and covariances estimate did not differ from the values obtained using the maximum likelihood method.

The obtained results showed the key role of the mother in shaping economic resourcefulness. This result is consistent with other studies showing the role of the mother in the process of the development and socialization of the child (see Carlson and Corcoran 2001; Bettinger et al. 2014; however, in some areas, intergenerational transfer of attitudes is not present—see Cipriani et al. 2013). The estimation of additional models, which are not analyzed directly in this article, shows a few other dependencies that are not directly considered due to their large number and much weaker fit. First, they show less importance of an upbringing without a father (the influence of the father is much weaker, and the model including parenting without a father is worse fitted). The work of the mother has a small but positive impact on resourcefulness.

The greatest importance of a professional career (among values in life) shows an interesting aspect of resourceful people: for them, neither wealth nor financial comfort (i.e., manifestations of resourcefulness) is an end in itself, but they are focused on building wealth through success in their professional work. This is in line with the results of Bengtson et al. (2002), who show that people who are career-oriented and have higher aspirations actually acquire higher occupational status. One interesting aspect of the influence of values on resourcefulness is also the fact that friendship, family life and possessing assets were irrelevant to resourcefulness.

The final form of the model also showed that the most important—from the point of view of economic resourcefulness—personality trait was emotional stability. Less important were extraversion and openness to experience (they resulted in a worse model fit), while agreeableness and conscientiousness were completely irrelevant. The observed

layout of features clearly suggests that resourcefulness is supported by creativity, positive thinking and ease of social interactions. Such results in the context of job performance are generally supported by Rothmann and Coetzer (2003) and Barrick and Mount (1991; potential ambiguities with conscientiousness may be explained by results of Mount et al. 2006).

Among the analyzed areas of subjective self-esteem perception, the most important thing was the sense of being able to do different things as well as most other people do them. It is worth emphasizing that this was the only dimension of self-esteem that directly referred to other people and compared with them. This finding suggests that a generally good opinion about yourself is less important for resourcefulness than the belief in the possibility of the appropriate use of one's own traits and skills (as this aspect is directly related to job and professional activity, it is supposed to directly impact work-related attitudes and behaviors—see Pierce and Gardner 2004). The impact of this variable on resourcefulness is not direct, but it is related to declared values in life and personality traits that are important from the point of view of shaping resourcefulness. At the same time, the obtained structure of the model suggests that the related variables may be manifestations of another hidden feature, the analysis of which is beyond the scope of this article.

It is also worth emphasizing that the model presented in Fig. 1 was estimated for the entire sample of respondents who were children (902 people). Very similar results not only in terms of the sign but also in terms of the values of regression weights were obtained for each of the subgroups, separated by the respondent's age (the first group included people aged 25–31, the second aged 32–38 and the third aged 39–45). As mentioned above, these groups differ in their experiences of economic transition. The third group, the oldest, were teenagers at the beginning of the transformation, the middle group were in primary school, and the youngest were in preschool. Considering the stages of personality development (see Caspi et al. 2005), it seems reasonable to verify whether the relationships between the various components of the model are stable for the groups mentioned. The obtained result, confirming this stability, therefore constitutes an incentive for further analysis and verification of the proposed model for other groups of respondents.

7.3 Intergenerational Relationships

The second, very important area of the analysis of the determinants of economic resourcefulness is that of intergenerational relationships. Therefore, as an extension of the analyses presented in the previous section, we decided to analyze a model in which the resourcefulness of respondents' children will be explained by the characteristics of their parents, who also participated in the study. The appropriate model is presented in Fig. 2. The results of the model estimation are presented in Table 2.

As in the case of the first model, estimation using maximum likelihood method, the results in values of fit measures ($\chi^2/df=0.461$, RMSEA=0.000) lie significantly below the previously indicated maximum values and indicate a good fit. All estimated parameters were significantly different from zero at $p<0.01$. Analogous results were also obtained using the Bayesian estimation.

The greatest change in relation to the model estimated for the children's generation is that the declared values, including those related to the importance of a professional career, cease to be significant. In this context, considering that the declared values relate to the time of the survey, not that of previous years, it is worth noting that people from this group

Fig. 2 Economic resourcefulness: intergenerational model. *Source:* Own elaboration

Table 2 Economic resourcefulness, intergenerational model—estimation results. *Source:* Own calculations

Regression weights			Estimate	Standard error	P
Structural equations for the latent variable economic resourcefulness (cause indicators)					
Economic resourcefulness	←	Emotional stability	0.16	0.036	0.000
Economic resourcefulness	←	Raised without a mother	−1.37	0.209	0.000
Measurement model for the latent variable economic resourcefulness (effect indicators)					
Savings	←	Economic resourcefulness	1.016	0.097	0.000
Wealth	←	Economic resourcefulness	0.385	0.034	0.000
Stable income	←	Economic resourcefulness	0.322	0.024	0.000
Suitable job	←	Economic resourcefulness	0.646	0.052	0.000
Covariances			Estimate	Standard error	P
Emotional stability	↔	I can work as well as others	0.162	0.034	0.000
E4	↔	E3	0.186	0.065	0.004

have either already completed their professional work or are approaching its end, which naturally limits their orientation toward career and professional success.

However, the stability of the other elements of the model that are not directly related to professional career but concern personality traits and self-esteem is essential (the assessment of job opportunities not being worse than in the case of others does not have to refer to professional work only and is not as future-oriented as the values related to career and success). As in the model for only the children's generation, emotional stability and the

perception of oneself as someone who is able to do different things as well as most other people are still crucial. This finding may suggest that important elements are subject to intergenerational transmission.⁷ In addition, the aspirations, values, and self-confidence of the younger generation in a two-generation family are partially shaped by parents, thus conditioning the resourcefulness of the next generation (previous studies suggest some transmission of skills—see Bengtson et al. 2002 and Anger 2011 for further analyses of areas and transmission mechanisms).

8 Conclusions

The attempt to define the concept of economic resourcefulness indicates the possibility of identifying a certain set of features that are key to the “efficiency” of functioning on the market. These features include personality traits, selected aspects of self-esteem, and declared values in life. This means that aspects directly related to the economic dimension are not the only important factors shaping economic resourcefulness: factors affecting self-confidence and the lack of a sense of “being inferior” also seems very important. The meaning of individual variables changes slightly with the age of the respondents (the age group to which they belong). However, the model’s form and set of significant variables remain constant.

The very complex nature of economic resourcefulness means that the determinants analyzed in the article do not exhaust the list of factors that can condition it. Due to the desire to guarantee an appropriate sample size and its uniformity, in the survey used in the empirical section, we decided that all respondents from the “children” group should have a tertiary education. This allowed us to attempt to identify differences between groups of respondents with other experiences related to political transformation (these differences turned out to be nonsignificant from the point of view of the set of identified factors). However, it did not allow for an assessment of economic resourcefulness in the context of education level. Therefore, considering that economic resourcefulness is a form of human capital, both the quality of education obtained at school and the quality of training offered by the employer can be seen as important factors that influence economic resourcefulness. Therefore, they will be considered at a later stage of research: the quality of education obtained could be an important factor determining economic resourcefulness when the level of formal education is the same.

The results obtained for personal characteristics also encourage deepening this area of analysis. Therefore, we plan to extend the study in two directions. First, the importance of time in economic decision-making processes will be considered: i.e., whether procrastination and time preferences have a significant impact on economic resourcefulness. Second, the impact of the self-control mechanism will be examined by including, among others, the locus of control (see Rotter 1966).

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⁷ Several other aspects, such as parents’ education level, income, and place of residence proved not important for children’s resourcefulness. Surprisingly, the cohabitation of parents and children had no impact on the resourcefulness of the younger generation.

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Appendix: Selected Survey Questions

Ten Item Personality Inventory (see Gosling et al. 2003)

Name of the variable used in the final model Emotional stability (answer to questions 4 and 9 below)

Scale

1 = Disagree strongly; 2 = Disagree moderately; 3 = Disagree a little; 4 = Neither agree nor disagree; 5 = Agree a little; 6 = Agree moderately; 7 = Agree strongly

Questions

I see myself as:

1. Extraverted, enthusiastic.
2. Critical, quarrelsome (reverse-scored).
3. Dependable, self-disciplined.
4. Anxious, easily upset (reverse-scored).
5. Open to new experiences, complex.
6. Reserved, quiet (reverse-scored).
7. Sympathetic, warm.
8. Disorganized, careless (reverse-scored).
9. Calm, emotionally stable.
10. Conventional, uncreative (reverse-scored).

Comment

Each personality trait was modeled as the sum of the results obtained for two questions.

For (R) question, the score was reverted.

Self-esteem Scale (Based on Bengtson et al. 2002)

Name of the variable used in the final model I can work as well as others (answer to question 2 below)

Scale

1 = Disagree strongly; 2 = Disagree moderately; 3 = Neither agree nor disagree;
4 = Agree moderately; 5 = Agree strongly

Questions

1. I feel that I have a number of good qualities.
2. I am able to do things as well as most other people.
3. I feel I do not have much to be proud of.
4. On the whole, I am satisfied with myself.

Values in Life (Based on Bengtson et al. 2002)

Name of the variable used in the final model I appreciate: professional career (answer to question 9 below)

Scale

1 = Disagree strongly; 2 = Disagree moderately; 3 = Neither agree nor disagree;
4 = Agree moderately; 5 = Agree strongly

Questions

Something that I value in life is:

1. Financial comfort (enough to have the things you really want in life).
2. Respect or recognition from other people.
3. Friendship.
4. Family life.
5. Adventures, new challenges, long journeys.
6. Attractive appearance (knowing others admire how you look).
7. An ethical life.
8. Possessions.
9. Career advancement (achieving success in your job or profession).

Lack of Mother's Presence in Childhood

Name of the variable in the model Raised without a mother

Value 1, if the respondent gave a positive answer to one of the questions:

1. During your childhood, have both parents been constantly present in your life?
No, I was raised without a mother (at least 5 years of age).
2. During your childhood, have both parents been constantly present in your life?
No, I was raised without both parents (at least 5 years of age).
3. During your childhood, have both parents been constantly present in your life?
Yes, but only my father took care of my education.

Otherwise, the value is 0

Job Quality, Suitability

Name of the variable in the model Suitable job

Scale

1 = Definitely not; 2 = Rather not; 3 = I have no opinion; 4 = Rather yes; 5 = Definitely yes

Question

Would you describe your job as “good” (suitable)?

Stability of the Income Source

Name of the variable in the model Stable income

Scale

1 = Often; 2 = Sometimes; 3 = Never

Question

Did you feel in the last month that your source of income is unstable and uncertain?

Wealth

Name of the variable in the model Wealth

Question

How would you rate the level of your wealth compared to the total population of your city? Please enter the rating on a scale of 1–5, where increasing values mean an increasing assessment of the material situation.

Savings

Name of the variable in the model Savings

Scale

0 = No savings; 1 = Up to your monthly income; 2 = Up to 2 times your monthly income; 3 = Up to 3 times your monthly income; 4 = Up to 5 times your monthly income; 5 = Up to 10 times your monthly income; 6 = Up to 20 times your monthly income; 7 = Above 20 times your monthly income

Question

What is the approximate value of your household savings?

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