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The impact of job insecurity on risk perceptions: The case of Sweden

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Abstract

This paper sets out to investigate the impact of subjective job insecurity, i.e. expectations of job loss within the next 12 months, on general risk perceptions. The paper builds on earlier research of the so called White Male Effect (WME) showing that women and people with foreign background perceive risks higher than women and native people. It is well known that women and people with foreign background on an aggregated level have a more insecure labour market situation compared to native people. Hence, the assumption is that perceived job insecurity influence risk perception; people with a less secure employment situation will perceive risks as comparably higher than people with a more secure employment. The empirical analyses are based on a Swedish national survey (n=510) about risk perceptions conducted autumn 2008. The results indicate that there is a relation between perceived job insecurity and risk perceptions in general.

Introduction

This paper addresses the impact of job insecurity, in terms of subjective expectations of job loss within the next 12 months, on current general risk perceptions. The paper builds on earlier research showing that women and people with foreign background perceive risks higher than men and native people e.g. the white male effect "WME" (Finucane et al. 2000, Flynn et al. 1994, Jones, Abbot & Quilgars 2006, Olofsson & Rashid 2007). The reasons behind this difference are however not sufficiently investigated. A number of explanations have been proposed among which inequality and differences in values are common (e.g. Flynn et al. 1994, Kahan et al. 2007, Palmer 2003, Quilgars, Jones & Abbott 2008, Satterfield,

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Mertz & Slovic 2004). This paper focuses primarily on the first explanation due to two reasons:

1) A comparative study of the United States and Sweden showed that gender did not have as significant role in Sweden as in the United States (Olofsson & Rashid 2007). On the contrary, there were hardly any gender differences in the Swedish case. Considering that Sweden is ranked highest out of 58 countries in gender equality, while the United States has an overall rank of 17 and ranked 46 and 42 concerning 'Economic opportunity' and 'Health and well-being' (Lopez-Carlos & Zahidi 2005) it is not unreasonable to draw the conclusion that increased equality decreases differences in perceived risks. In Sweden, equality between ethnic groups is on the other hand not as developed as gender equality, and in accordance with the hypothesis of the relationship between equality and risk perceptions the effect of ethnicity was significant in Sweden just as in the United States (Olofsson & Rashid 2007).

2) Inequality is a complex phenomenon composed of a range of different components, objective as well as subjective. To fully understand its relation to risk perception further research is needed to sort out the effect of different kinds of inequality, which is the general aim of the present paper.

More specifically, we intend to investigate economic opportunity as a measurement of equality. Economic opportunity is operationalised as security at the labour market. It is found that peoples' expectations of job insecurity determine their current behaviour, and people vary considerably in their expectations (Mansky 1999, Mansky & Straub 2000). In addition, it is well known that in average people with foreign background has less secure labour market situation compared to native people (e.g. Arai, Regnér & Schröder 1999, Baker & Benjamin 1994, Borjas 1995, Rashid 2009). One reason maybe due to the difficulties immigrants face in transferring country-of-origin human skills across national borders (Chiswick 1978, Rashid 2009). Another reason, which is our main reason, is related to discrimination against immigrants on the national labour market (Arai, Bursell & Nekby 2008, Rooth 2007). Women in Sweden on the other hand do not face similar discrimination. However, women tend to more often have part time jobs and less secure employments than men have (Arai, Bursell & Nekby 2008).

Hence, the basic assumption is that subjective expected job insecurity influence risk perception; people with a less secure employment situation will perceive risks as comparably higher than people with a more secure employment situation, regardless of gender and ethnicity. Consequently, the structural difference in job insecurity, due to inequality on the labour market, contributes to the explanation of the WME of general risk perceptions.

Earlier research (further research will be added)

In the beginning of the 1990s, Flynn et al. (1994) showed that white men judge risks as smaller than do women and ethnic minorities. This group of men had high education, high income and conservative political views. Further, they were shown to be individualists, anti-egalitarian and having high trust in official bodies. These results have been confirmed by a number of studies in the United States (Finucane et al. 2000, Johnson 2002, Palmer 2003, Satterfield, Mertz & Slovic 2004). However, results Sweden and Europe are more ambiguous: Even though many studies of environmental risk perceptions show that women are more concerned than men are (Enander 2005, Gustafsson 1999), ethnicity, or origin, tend to be a more stable predictor (Enander & Johansson 2000, Olofsson & Rashid 2007, Olofsson 2007).

As mentioned in the introduction many different factors have been used to explain the WME, from socioeconomic characteristics to values and inequality. Finucane et al. (2000) show that women and ethnic minorities in the United States have lower education and income level than white men, which according to the authors interact with lower levels of perceived personal control and influence on public issues (Finucane et al. 2000: 161). Finucane et al. (2000) also argue that values play a significant role. Using value indicators based on cultural theory they show that values differ between the groups: White males have individualistic and hierarchical values, while women and ethnic minorities are more inclined to egalitarian values. This is confirmed by Palmer (2000: 81), who shows that Taiwanese men, with the same kind of individualized and hierarchical values as white males, express similar low risk perceptions. However, she merely concludes that there are differences between ethnical groups and between men and women, without controlling for other factors such as education and age, or investigating the statistical relationships between the different factors.

In a similar study, Kalof et al. (2002), show that white males have dissimilar values and beliefs compared to women and non-white groups in the United States. Even though they are convincing in showing this difference, they do not empirically test the relationship between the WME and values. Kahan et al. (2007), on the other hand, not only stipulate that cultural values correlate with gender and origin, but also show it empirically. They investigate both confounding factors and the interrelationship between values, race, gender and risk perceptions. The results show that worldviews, based on cultural theory, moderate the impact of gender and ethnicity on risk perceptions. Additionally, they promote as an explanation identity-protective cognition (Kahan et al. 2007). Nonetheless, the investigation is made on

three specific risks; risks related to guns, abortion and environmental risks, and not on risk perceptions in general.

Explanations related to inequality can be categorized as objective and subjective, although the two are not exclusive. On a general level Satterfield, Mertz and Slovic (2004), show that experiences of discrimination and economic and physical disadvantages make women and ethnic minorities more receptive to different kinds of risks. The authors define economic and physical disadvantages in terms of individually perceived fragility, economical insecurity and/or health problems (Satterfield, Mertz & Slovic 2004: 116) and show that men with experiences of exposure to discrimination also have higher perceptions of health risks. However, the study exclusively focuses on health risks and not on risks in general. We have already seen that socioeconomic variables such as income and education are related to gender and ethnicity (Finucane et al. 2000), which gives an indication of structural inequality related to risk perceptions.

The are indications that these kind of structural differences, e.g. of economic opportunities, which traditionally have been understood in terms of class, gender and ethnicity more and more are seen as a consequence of individual failure (Jones, Abbot & Quilgars 2006). The argument is based on Beck (1992), among others, thesis of a value shift towards a more individualized (risk) society. Without entering deeply into this argument, research do indicate that social inequality tend more frequently to be defined as an individual problem, although class, gender, age and ethnicity still structures inequalities in life (Cebulla 2007, Elliot 2002, Furlong & Cartmel 1997, Olofsson & Öhman 2007, Quilgars, Jones & Abbott 2008, Taylor-Gooby 2001).

Few studies have directly related risk perceptions and the WME to economic opportunities and job insecurity. However, there are studies of how groups that might be subject to inequality perceive economic and labor market related risks. The conclusions we can draw from these studies is that class still play a role for people's perception of the risk of income loss and ability and willingness to adjust to more insecure labour markets (Cebulla 2007, Quilgars & Abbot 2000), disabled people are subject to and worry more labour market discrimination and that faith plays a significant role for people's financial planning (Abbot, Quilgars & Jones 2007, Quilgars, Jones & Abbott 2008). However, these studies did not find clear differences due to ethnicity or place of origin. Most of these studies are interview studies with large number of individuals, hence, survey data is a valuable compliment. A survey based study shows that workers vary considerably in their subjective expectations of job insecurity, and that race is a strong predictor (Manski & Straub 2000). In Manski & Straub's

(2000) American study gender played almost no significant role and neither did age. On the other hand, education, as well as being self employed, tends to decrease the expectation of job loss. However, this study does not relate job insecurity to risk perception in general, but to modern economic theories of the labour market.

Following earlier studies of the WME and subjective expectations of job insecurity this paper investigates the relationship between general risk perceptions, gender, place of origin, job insecurity (inequality) values, socio-economic factors and earlier experiences of risk. We differentiate between three kinds of risks; defined as *controlled*, *dread* and *known* risks (Olofsson, Öhman & Rashid 2007, cf. Slovic 1987). Values are defined in accordance with cultural theory (Douglas & Wildavsky 1982, cf. Dake 1991, Rippl 2002 cf. Kahan et al 2007).

Data and method

The analyses are based on data from a Swedish national survey "Society and Values" (S&V) conducted as a postal questionnaire during the autumn 2008. The dataset used in the analyses is composed of two representative samples of the Swedish population between the ages of 16 and 75: A national random sample (n=2000, response rate 58%), and a random sample of people living in three districts in Stockholm, Göteborg and Malmö (n=750, response rate 39%). The purpose of the second sample was to increase the number of people with foreign background in the dataset. Due to e.g. language problems and faulty addresses, the response rate among immigrants is expected to be low. All questionnaires were not coded by the time of writing this paper, as a result the analyses is based on 510 responses of 1442.

The survey has a total of 280 questions based on the S&V survey 2005 and earlier studies (e.g. Olofsson, Öhman & Rashid 2005, Sjöberg 2000). The questionnaire includes risk perception questions (examples of risks; smoking, alcohol, diseases, environmental risks, fires, terrorism etc.), experiences of risks, proactive behaviour, risk communication, values, trust, socioeconomic information etc. The explanatory variables used in this paper are gender, place of origin and expectations of job loss. The first variables measure the WME and the last is expected to measure the individual's labor market situation. In addition to these a number of control variables are also included in the analysis; age, education, values and earlier experience of risks. To further investigate the interrelationship between place of origin and expectations of job insecurity (see Table 1).

Table 1: Descriptive Statistics.

Independent Variables	Definition	Mean (s.e.)	Median	N-OBS
AGE	Age in years	46.4 (16.3)	48	509
AGE_SQ	Age squared			
EDU	Education in years (1-24)	11.9 (3.3)	12	494
FAT	Fatalism (factor scores)	0 (1.0)	-.068	510
EGA	Egalitarianism (factor scores)	0 (1.0)	.126	510
HIE	Hierarchy (factor scores)	0 (1.0)	.059	510
IND	Individualism (factor scores)	0 (1.0)	-.010	510
EXP	Earlier Experience of risk (0-11)	1.43 (1.65)	1	486
NAT	Place of origin (Native=1, Foreign background=0)	.84 (.37)	1	510
FEM	Gender (Female=1, Male=0)	.53 (.50)	1	510
JOBINSEC	Job insecurity (Likert scale 1-5; 1=low prob., 0=high prob.)	1.99 (1.13)	2	376
Dependent Variables	**Definition**	**Mean (s.e.)**	**Median**	**N-OBS**
Controlled Risks	E.g. smoking, drinking (factor scores)	0 (1.0)	-.230	510
Dread Risks	E.g. climate change (factor scores)	0 (1.0)	-.091	510
Known Risks	E.g. traffic, leisure time (factor scores)	0 (1.0)	-.017	510

Independent variables

Place of origin was measured by asking the respondents in which country they were born and then create a dichotomy between respondents born in Sweden and respondents born in Africa, Asia, South America and Eastern Europe (respondents born in the Nordic countries, North America and Western Europe were excluded). Subjective expectations of job insecurity was measured through the respondents' subjective estimation of the probability of loosing their job and become unemployed during the next 12 months on a scale from 1 (very low probability) to 5 (very high probability). The scale was also transformed into a dichotomy between those who answered 1 (n=157), low probability, and all other responses (2-5, n=217), higher probability, for the descriptive analysis.

Except for these variables other individual characteristics known to influence risk perceptions were used as control variables. These variables are: Age, education, values and experience of risk. Age was used both as a linear variable and as a curve linear since there are reasons to believe that the relation between risk perception and age not necessarily is linear. Education was measured by asking the respondents how many years they have studied in school. To measure values, Rippl's revised cultural bias scale (based on Dake 1991), was translated and used. The scale has 18 worldview items that was expected to form four factors;

Fatalism, Egalitarian, Hierarchy and Individualism. Using factor analysis (principal component analysis, varimax rotation) this was confirmed and four new variables was created using factor scores.[3] The solution was identical to Rippl (2002) and the earlier S&V-study (Olofsson, Öhman & Rashid 2007). 'Exposure' to risk was measured by asking the respondents if they had experienced any or several of seven different risks no, one or several times (e.g. fire, serious illness, natural catastrophe, traffic accident). The answers were merged into an index ranging between 0-11.

Dependent variables

Risk perceptions were measured in the survey by 16 risk items, consisting of statements to which the respondents indicated to which degree he/she found the risk in question to be a threat to him/her personally (based on S&V 2005, Sjöberg 1998, Slovic 1987). This risk scale was originally intended to form four factors; Known risks, unknown risks, controlled risks and dread risks. In our data both from 2005 and 2008, using factor analysis, the items formed only three factors; Known risks, controlled risks and dread risks.[4] The difference compared to earlier studies (for an overview see Slovic 2000) is that 'Unknown risks' and 'Dread risks' has merged into one factor.

Analysis

Since the data set is composed of relative few respondents and some of the variables do not fulfil the requirements of normal distribution, non-parametric tests have been applied. In the descriptive analysis Kruskal-Wallis tests, based on mean ranks, were used, and for the multiple analyses Least-absolute value (LAV) regression, based on quantiles and the median, was used.[5]

Findings

The findings are divided in two sections: The first section is descriptive. Analyses of gender, place of origin, and job insecurity in relation to perceived risk are presented in the first section. The second section is analytical. The findings from the first section is further

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[3] The four-factor solution was the best solution and explained 42% of the variance, each factor included 3-6 items, no factor loading was below .48, and not item loaded higher than .2 on more than one factors.
[4] Principal component analysis, varimax rotation, was used. The three-factor solution explained 56% of the variance, each factor included 3-7 items, no factor loading was below .54, and one item, violence, loaded on two factors (.45 on dread .61 on control).
[5] This kind of LAV regression estimates the median of the dependent variable, conditional on the values of the independent variable. This is similar to least-squares regression, but median regression finds the regression plane that minimizes the sum of the absolute residuals rather than the sum of the squared residuals (Gould & Rogers 1994).

explored with the help of multivariate analyses of the explanatory factors gender, ethnicity and job insecurity, and the control factors age, education, values and experience of risks.

Descriptive analyses

All three explanatory variables, gender, place of origin and expected job insecurity, show significant relations to at least two of the three dependent variables controlled risks, dread risks and known risks (see Table 2).

Table 2. Kruskal-Wallis[6] analysis of origin, gender, job insecurity and the three kinds of risks (*p=0.1, **p=0.05. ***p=0.01).

	Controlled risks		Dread risks		Known risks	
	Mean rank	Chi^2	Mean rank	Chi^2	Mean rank	Chi^2
Origin (Native/Foreign)	238.7/ 340.6	33.563***	246.3/ 302.34	10.159***	252.1/ 272.8	1.392
Gender (Female/Male)	238.2/ 274.7	7.782***	269.7/ 239.7	5.278**	257.5/ 253.3	.101
Job insecurity (High/Low prob.)	200.5/ 172.1	6.289**	198.9/ 174.3	4.674**	197.5/ 175.6	3.847**

Of the three explanatory variables, it is only expected job insecurity that shows significant differences between groups on all three kinds of risks. In all cases, people that judge their labour market situation as relatively unstable also perceive the risks as higher compared to people with a less instable job situation. This gives a first indication that our assumption that labour market security is related to risk perceptions in general.

Table 2 also shows that people with foreign background perceive controlled and dread risks as relatively higher than native people. The differences are quite large and although not significant the pattern is the same for known risks as well. However, the role of gender is more complex: There are significant differences between men and women for the same two risks, controlled and dread risks, but contrary to the WME women have not the highest risk perception in both of these cases. Women perceive dread risks higher than men do, but men show higher perceptions of controlled risks. These findings confirm earlier results from Sweden indicating that being foreign born correlates with high risk perceptions, while gender is more ambiguous. These results also indicate the importance of differentiate between different categories of risks (Cebulla 2007, Olofsson, Öhman & Rashid 2007).

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[6] Median tests and F-tests have also been done with similar results (the same pattern, but slightly different levels of significance in three analyses).

Table 3. The estimation results of the Least-absolute value regression model for different kinds of risk perceptions (N-OBS=334, *p=0.1, **p=0.05. ***p=0.01).

Dependent Variables	Controlled Risks			Dread Risks			Known Risks		
Independent Variables	0.25-quantile	Median	0.75-quantile	0.25-quantile	Median	0.75-quantile	0.25-quantile	Median	0.75-quantile
AGE	-0.04*	-0.3	-0.3	0.05*	0.05	0.06**	-0.0001	-0.015	-0.08***
	(0.22)	(0.3)	(0.04)	(0.03)	(0.04)	(0.06)	(0.03)	(0.03)	(0.02)
AGE_SQ/1000	0.3*	0.3	0.2	-0.5	-0.5	-0.5	-0.04	0.08	0.8***
	(0.2)	(0.3)	(0.4)	(0.3)	(0.5)	(0.3)	(0.2)	(0.31)	(0.25)
EDU	-0.04*	0.03	-0.05	-0.04*	-0.2	-0.03	-0.03	0.13	0.05**
	(0.02)	(0.3)	(0.03)	(0.02)	(0.04)	(0.03)	(0.02)	(0.02)	(0.02)
FAT	0.07	0.15**	0.27***	0.026	0.04	0.05	-0.13**	-0.01	-0.06
	(0.06)	(0.07)	(0097)	(0.07)	(0.04)	(0.8)	(0.05)	(0.07)	(0.05)
EGA	0.007	0.86	0.09	-0.07	-0.09	-0.13	0.05	0.06	0.09*
	(0.06)	(0.06)	(0.09)	(0.07)	(0.10)	(0.08)	(0.05)	(0.06)	(0.05)
HIE	0.02	0.03	-0.04	0.12*	0.06	0.04	-0.04	-0.06	-0.012
	(0.06)	(0.06)	(0.089)	(0.07)	(0.10)	(0.07)	(0.05)	(0.06)	(0.05)
IND	-0.000	-0.02	-0.025	-0.01	0.02	-0.04	-0.10**	-0.06	-0.04
	(0.06)	(0.062)	(0.08)	(0.07)	(0.10)	(0.08)	(0.05)	(0.06)	(0.05)
EXP	0.03	0.04	0.02	0.03	0.06	0.04	0.06*	0.07*	0.13***
	(0.03)	(0.04)	(0.05)	(0.03)	(0.06)	(0.04)	(0.03)	(0.04)	(0.03)
NAT	-0.35**	-0.82***	-0.93***	-0.09	-0.55**	-0.51**	0.10	0.06	-0.21
	(0.15)	(0.17)	(0.26)	(0.17)	(0.30)	(0.2)	(0.14)	(0.17)	(0.14)
FEM	-0.12	-0.22*	-0.21	-0.06	0.30*	0.35**	0.06	-0.11	-0.15
	(0.11)	(0.13)	(0.18)	(0.13)	(0.20)	(0.15)	(0.10)	(0.12)	(0.10)
JOBINSEC	0.03	0.13**	0.18**	0.12*	-0.01	-0.03	0.05	0.02	0.09*
	(0.05)	(0.06)	(0.08)	(0.07)	(0.09)	(0.06)	(0.05)	(0.06)	(0.05)
CONSTANT	0.83	1.3**	2.5**	-1.6**	-0.96	-0.05	-0.4	0.2	1.8***
	(0.55)	(0.65)	(0.97)	(0.71)	(1.02)	(0.07)	(0.5)	(0.64)	(0.55)
Pseudo R-square	0.07	0.11	0.16	0.05	0.05	0.06	0.04	0.04	0.09

Analytical analyses

Three Least-absolute value regression analyses were carried out to analyse each of the three kinds of risk perceptions (see Table 3). The models include not only the three independent variables place of origin, gender and job insecurity, but also the different control variables. The purpose of making multiple regression analyses like this is to test if the effect of the independent variables remains when other variables are considered. In this case, we have used a regression analysis based on the median and quantiles. This means that we investigate the impact of the independent variables within each quatile of the distribution of the dependent variable. The information given is thereby more detailed and it is for example possible to identify within which intervals of the dependent variable an explanatory variable has the largest impact (Gould & Rogers 1994).

The analytical results correspond fairly well with the descriptive analyses regarding place of origin and gender. People with foreign background have higher perceptions of controlled and dread risks than native people have. Perceptions of known risks do however not differ. The pattern is consistent across quantiles (one quantile is not significant, but the pattern is in accordance with the other results).

Men show higher perceptions of controlled risks than women do, while women have higher perceptions of dread risks. However, the correlation is rather weak regarding controlled risks. The analysis also shows that, even though the pattern is the same across quantiles, it is men among those who answered in the middle of the scale that have relatively higher perceptions of control risks.

Subjective expectancy of job insecurity do not show as clear-cut pattern as in the descriptive analyses. For one of the risks, controlled risk, it is apparent that increased job insecurity is correlated to higher risk perceptions. However, perceptions of dread and known risks are not as evidently related to subjective job insecurity. In the latter analysis, of known risks, the pattern is consistent, while for dread risks it is only among the lowest quantile that job insecurity leads to relatively higher risk perceptions. This indicates that further analyses are needed to sort out the relationship between gender, ethnicity and job insecurity. Unfortunately, we are unable to proceed with these analyses since the number of observations is too little.

Last, lets take a look at the control variables. Once again we find that the different kinds of risks are related to different explanatory variables. Earlier experiences only have an impact

on dread risk perceptions. Fatalist values are positively related to control risks and negatively related to known risks, but egalitarian, hierarchical and individualized values show surprisingly few and weak relations to all three risk categories. Age is negatively related to perceptions of controlled and known risks and negatively related to perceptions of dread risk. Education shows a relative weak negative relation to perceptions of controlled and dread risks, but a somewhat stronger positive relationship with known risk perceptions.

To sum up, ethnicity followed by gender are still the strongest predictors of general risk perceptions, although there it is not always women that have the highest risk perceptions. Subjective expectations of job insecurity is a promising variable to further understand the WME, but further analyses are needed. The greatest surprises were however found in the analyses of control variables: Earlier tested and shown important variables like values and earlier experiences of risks did not contribute much to the explanation of general risk perceptions in this study. One explanation might be the limited number of observations, and the fact that these probably are not a random sample of the population.

Conclusion

This study has shed light on the WME and the relationship between general risk perceptions and inequality. By investigating inequality in terms of economic opportunity, and more specifically subjective expectations of job insecurity, we have taken one step closer to an understanding of the relationship between the WME and general risk perceptions. The variation of the effect of gender and ethnicity in different contexts, i.e. more or less gender equal (Olofsson & Rashid 2007), indicates that these demographic characteristics mediate underlying causes such as job insecurity and other aspects of inequality. Hence, in an equal society, where women, immigrants and other exposed groups have the same opportunities as men and natives, there will be no WME in risk perceptions.

However, our results only give a glimpse of the full picture since this paper just focuses on one aspect of inequality. It is nevertheless a promising glimpse: Our descriptive results demonstrated the expected patterns between risk perceptions and gender (ambiguous), ethnicity (native people have lover risk perceptions) and job insecurity (increased insecurity means higher risk perceptions). Our conclusion is therefore that we have identified one part of the puzzle, but several more need to be added to get the full picture.

This study has also confirmed the importance of measuring risk perceptions as a multidimensional concept to capture differences in perceptions among population groups

(Cebulla 2007, Kahan et al. 2007, Olofsson, Öhmna & Rashid 2007, Slovic 1987). Furthermore, by using quantile analysis we have also shown that the impact of e.g. gender, ethnicity, education etc. might vary depending on how high risk perceptions the individual has.

The study has several limitations. First of all, the sample is incomplete and the additional almost 1000 responses need to be included in the analysis. Another issue that needs to be addressed is that the measurement of subjective expectancy of job insecurity is in itself a kind of risk perception and the study might have an endogenous problem. Related to this is also the problem of collinarity. Job insecurity is correlated to several of the socio-economic factors used in the regressions and even though tolerance measurements were carried out without alarming results, further analyses controlling for these problems need to be done. Last but not least, inequality needs to be measured as a multi-dimensional concept and not only in terms of economic opportunities.

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