

Measuring the Socio-economic Empowerment of Rural Households in Pakistan

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ABSTRACT

This paper is developing a socio-economic empowerment index, aimed at obtaining a first snapshot of the state of socio-economic empowerment as measured by the rural household survey. Instead it is meant to foster the debate on the determinants of socio-economic empowerment and also highlights the dimensions of socio-economic empowerment. The most important section of this study is to develop an index for the measurement of socio-economic empowerment of rural households in Pakistan by using primary data of rural households which was collected through multi stage random sampling of rural households from Bahawalpur division and 600 household were interviewed for sample size. Weights of the indicator variables have been computed by using Principal Component Analysis. Socio-economic empowerment index gathers together mainly two factors, social and economic empowerment which twenty six indicators (items) grouped in eight sub-pillars and in two main pillars. Current study might be helpful for government to formulate and implement effective poverty reduction policies for rural households by enhancing socio-economic empowerment.

Keywords: *Principal Component analysis, Social empowerment, Economic empowerment, Composite index, Bahawalpur Division*

INTRODUCTION

Poverty reduction is the important agenda for the less developed countries. Rural poverty is one of the major issues in Pakistan. In spite of modest economic growth, rural poverty has not been reduced due to various reasons. Poverty is complex and it can be articulated in 'non-income' and 'income' components (World Bank, 2003). The non-income component of poverty is made up of peoples' participation, vulnerabilities, capabilities and empowerment. The non-income poverty is viewed as a condition of powerlessness, lack of voice, vulnerability, lack political participation, limited access to education and health. While the income poverty is viewed as lack of employment, land,

other assets, credit, services and infrastructure. The non-economic approach of poverty such as social, political and psychological disempowerment has been emphasized in the poverty reduction strategy.

It is quite evident, that empowerment can enhance the capability of the poor people to overcome poverty. The empowerment approach places the emphasis on autonomy in community decision making, local self-reliance, direct democracy and social learning. There is debate on the notion of 'socio-economic empowerment' has been rapidly increasing during the last decades. A sense of self-possession and autonomy has been developed through a process that may call social empowerment. Poor institutional arrangements and weak relationships among the rural community tend to acting collectively and individually that exclude poor people. Thus, the poor section becomes marginalized due to lack of social empowerment. Individual's assets (i.e. livestock, saving, land, housing, etc.) and capabilities: psychological (i.e. aspire to a better future, the ability to imagine, confidence and self-esteem), human (i.e. good health, education and employment) and social (i.e. leadership relations, social belonging and a sense of identity, etc.) are significantly affected the poor people's ability and its empowerment to hold others to account. Moreover, collective assets of peoples along with their capabilities (i.e. identity, representation, organization and voice) are essential.

Economic empowerment has considered to exercise greater control over both their life choice and resources furthermore, to allow poor people to think away from immediate daily survival. Economic empowerment allows households to take their decisions about investment in various economic activities in order to boost their level of income. Economic empowerment can also enhance access to various social activities that improve status of poor and vulnerable households.

Several studies highlighted the importance of households' economic empowerment. Most studies focused four extensive areas of household's empowerment: a) transformative forms of social protection, b) the encouragement of the assets of poor people, c) skill training and d) microfinance. Economic empowerment is known as to permit poor people to think how to handle their own living choices and wealth. It enables households to make their personal choices about making investments in education and medical insurance, and captivating risks to be able to boost their income. There are evidences that economic empowerment could create stronger susceptible groups' involvement on the decision-making. Better decision making and good social position is normally just due to economic power.

The Federal Bureau of Statistics (2012) stated that nearly 38 percent population of rural areas in southern Punjab in Pakistan is poor and placed second highest position after rural areas of North-West Frontier Province

(NWFP). Poverty is more chronic and severe in rural areas of Balochistan, NWFP and Southern Punjab (IFAD, 2001)¹. However, southern Punjab has received little attention to include poor people in the development programs which create serious policy issues. The severity of the poverty problem is observed in Bahawalpur division from Southern Punjab, Pakistan. Information is not sufficient to understand the social dimensions of poverty in southern Punjab.

A large number of studies are available in Pakistan who used socio-economic empowerment as an explanatory variable for measuring poverty in rural households. Most studies used different proxy variables for measuring socioeconomic empowerment. These studies conclude that the empowerment has a strong impact on household welfare². However none of the studies measured socio-economic empowerment for the households. This study aims to develop an index, to measure socio-economic empowerment of rural households. The study will contribute a debate on the determinants of socio-economic empowerment and also highlights the spatial dimensions of socio-economic empowerment. The main contribution of this study is to develop an index for the measurement of socio-economic empowerment of rural households in Pakistan.

Empowerment is a process through which community become strong enough to participate and share in the control of and influence and institutions affecting their lives. Eyben et al. (2008) suggested a framework where they explored conceptually and operationally for understanding empowerment of poor households. The study also examined the different facets of political, economic and social empowerment. Kabeer and Tasneem (2011) explored the impact of women empowerment by using a combination of qualitative interviews and survey data. Study also analyzed how the paid women workers can participate in their intra-household decision making processes that contribute women empowerment. Bertini (2011) analyzed the relationship among rural economy and adolescent girls. The study estimated that how agents contribute to both social and economic growth. The study also highlighted the ways in which bilateral donors and government can provide effective professional and personal support to rural girls' for empowerment.

METHODOLOGY

The data used in this paper is obtained from household survey. A total 600 households were selected through multi-stage random sampling. The sample households were selected through applying four steps. At first, District Bahawalpur and District Bahawalnagar were randomly selected from division

1 The international fund for agriculture development (2001)

2 Malik (1996), Amjad and Kemal (1997) Rehman and Chaudhry (2009), Chudhary et al. (2009): Qureshi and Arif (2000): Arif et al. (2000), Ali and Tahir (1999)

Bahawalpur. In the second step, two Tehsils (sub district) from each district were selected randomly, Tehsil Hasilpur and Kherpur-Tamywale was chosen from Bahawalpur District and Tehsil Chishtian and Haroonabad were chosen from Bahawalnagar District. In the third step, two union councils selected from each tehsil and then two villages from each union council were selected as sample. In the last step, number of households was selected in each village to obtain information. Total sixteen villages were selected from eight union council of Bahawalpur (two from each Hasilpur and Kherpur-Tamywale) and Bahawalnagar (two from each Chishtian and Haroonabad). The information was collected from the head of household. Structured questionnaire was used to obtain the data which covered household demographic characteristics, community characteristics and other social development of rural households.

Selection and Measurement of Variables

Socio-economic empowerment comprises various social and economic conditions which are measured by a set of variables as defined in Table 1. Several variables were identified to measure household's socio-economic empowerment which includes household assets and factors that affect household's socio-economic empowerment.

The variables for economic empowerment and social empowerment were used to construct household's socioeconomic empowerment. An index was constructed based on eight sub-factors; namely: shelter, education, assets and property, livestock, health of household members, gender of household head, household accessories, and groups and networks. These eight variables comprise thirty six items presented in Table 1.

Table 1

Framework of Socio-economic Empowerment Index

Factor	Sub-Factor	Items
Social Empowerment	Education	Access to school Average education of the household
	(Khan, et al. 2015; Chaudhry and Rahman, 2009; Hashmi, 2006)	Education of head of household
	Gender of household head	Gender of household head (male or female)
	(Khan, et al. 2015; Chaudhry and Rahman, 2009)	Membership in formal or informal organizations or associations

(continued)

Factor	Sub-Factor	Items
		Ability to get support from other than family members and relatives in case of hardship
		Ability to get loan from family and friends in case of hardship
		Participation in Community Issues
	Shelter	Area of the house
	(Arif, 2000)	House own or rented
		Sanitation system (latrines)
		The availability of electricity
		Building types (Material)
	Assets and Property	Land owned
	(Khan et al. 2015; Chaudhry, et al., 2009)	Land leased
		Tractor
		Farm equipment
		Tube well
		Sheep/Goat
	Livestock	Buffalo/Cow
	(Chudhary, 2009; Hashmi, 2006;)	Serious disease (T.B, hepatitis, etc.)
		Availability of health care services
	Health within Household	
	(Khan et al. 2015; Chaudhry, et al., 2009)	
		Separate kitchen
		Motor-cycle
	Household Accessories	Sewing machine
	(Khan et al. 2015; Chaudhry, et al., 2009)	Car / jeep
		Personal computer or laptop
		Water pump
		Washing machine
		Air-conditioner
		Room-cooler
		Refrigerator
		Cell phone
		Television
		Radio
		Gold / Silver / Bonds

Construction of Socio-economic Empowerment Index (EMPI)

Most of the existing work on empowerment emphasized the different ways of mobilizing social relationship from within civil society to engage with other factors. Empowerment of poor people can be measured through their access and participation in making decisions in community and social affairs. The severity of poverty due to disempowerment is responsive to the local situation, capacity building and access to information. This can be measured by constructing an empowerment index. Weights of Indicator variables are assigned in numerous ways. Ad hoc weights like as assign 5/6 for asset and property, 2/6 for health and 3/6 for education, effort to a definite extent but there are chance with regard to canvasser and are difficult to assign when socio-economic empowerment ordering is not clearly visible. For this entity the current study recommended The Principle Components Analysis (PCA) is to allocate the weights of indicator variables. The Principal Component Analysis (PCA) allows the reduction of a number of variables into one or fewer variables. The PCA is used to measure socio-economic empowerment which analyze the multiple correlation principle and can explain the variance of the dependent variables. The principal component analysis selects factors with eigenvalues greater than one and they are considered significant. The PCA is used to measure empowerment based on the construction of indices using the formula:

$$(1)$$

Where, I = the weighted index; W = percentage contribution of each selected variable as the weight; X= the value of each variable; and Σ = the summation sign.

The factor loadings of components of socio-economic empowerment are calculated by using principle component analysis. This process first standardizes the variables and then computes the eigenvalues which is recognized as the variance of the factor of element and hence it can be used to evaluate the significance of any factor or component. If the manifest variables are homogeneous then its mean is zero and the variance is equal to one for each. If we have N identical manifest variables in our analysis, the summation of their variances is N. Principal component analysis (PCA) transforms the data such as the total variance components N distributed at random between the components. The first eigenvalue is higher than the second and next to persevere with the nth lowest eigenvalue. Currently the factor coefficient ratings or factor loadings usually are calculated by block and sum of all eigenvectors. The value which usually we acquire is regarded communalities or extraction value”.

Table 2:

Description of Variables

Education of head of household	If yes Assigned value 1, otherwise 0
Average education of the household	Assign value 0 if no-education; assign value 5 if the education is at middle level assign value 10 if the education is at college or university level
Access to school	If yes Assigned value 1, otherwise 0
Household head is male or female	Household head is male then assign value 1, otherwise 0.
Membership in formal or informal organizations or associations	If yes Assigned value 1, otherwise 0
Ability to get support from other than family members and relatives in case of hardship	If yes Assigned value 1, otherwise 0
Ability to get loan from family and friends in case of hardship	If yes Assigned value 1, otherwise 0
Participation in Community Issues	If yes Assigned value 1, otherwise 0
Building types (Material)	If house is bricked assign value 1, otherwise 0
The availability of electricity	If yes Assigned value 1, otherwise 0
Sanitation system (latrines)	If yes Assigned value 1, otherwise 0
Personal house or rented	If yes Assigned value 1, otherwise 0
Size of the house	Assign value 0 if house is less the 3 (Marla), assign value 1 if house is up to 7 (Marla), otherwise 2
Land owned	If yes Assigned value 1, otherwise 0
Land leased	If yes Assigned value 1, otherwise 0
Tractor	If yes Assigned value 1, otherwise 0
Farm equipment	If yes Assigned value 1, otherwise 0
Tube well	If yes Assigned value 1, otherwise 0
Sheep/Goat	Assign value 1 for one sheep or Goat
Buffalo/Cow	Assign value 5 for one Buffalo or cow
Serious disease (T.B, hepatitis, etc)	If yes Assigned value 0, otherwise 1
Availability of health care services	If yes Assigned value 1, otherwise 0
Separate kitchen	If yes Assigned value 1, otherwise 0
Motor-cycle	If yes Assigned value 1, otherwise 0
Sewing machine	If yes Assigned value 1, otherwise 0
Car / jeep	If yes Assigned value 1, otherwise 0
Personal computer or laptop	If yes Assigned value 1, otherwise 0

(continued)

Education of head of household	If yes Assigned value 1, otherwise 0
Water pump	If yes Assigned value 1, otherwise 0
Washing machine	If yes Assigned value 1, otherwise 0
Air-conditioner	If yes Assigned value 1, otherwise 0
Room-cooler	If yes Assigned value 1, otherwise 0
Refrigerator	If yes Assigned value 1, otherwise 0
Cell phone	If yes Assigned value 1, otherwise 0
Television	If yes Assigned value 1, otherwise 0
Radio	If yes Assigned value 1, otherwise 0
Gold / silver / bonds	If yes Assigned value 1, otherwise 0

RESULTS AND DISCUSSION

There are several steps to construct socio-economic empowerment index: assign values, determinations of indicator variables, measurement of indicator weights and calculation of index value. Factor analysis is done to generate a socio-economic empowerment index and factors are extracted from the correlation matrix through principle component analysis.

This method ensures that every factor is independent. These extraction values or factor loadings are used to construct socio-economic empowerment index. Each indicator is given an equal weight within the index. Krishna and Uphoff (1999) stated that normalizing the range of each indicator to be between 0 and 1 by dividing each indicator by its range and then summing across the indicators. It can be seen that the dominant factor (Table 3) led to enhance the socio-economic empowerment with higher value of loading factor or extraction value.

Table 3:

Results of the Factor Analysis

Factor	Sub-Factor	Indicators	Factor loading	Percentage
Social Empowerment (42.90%)	Education (7.53%)	Education of head of household	0.507	3.75
		Average education of the household	0.511	3.78
	Gender of Household Head (3.80%)	Household head is male or female	0.513	3.80

(continued)

Factor	Sub-Factor	Indicators	Factor loading	Percentage	
Social Empowerment (42.90%)	Groups and Networks (18.54%)	Membership in formal or informal organizations or associations	0.642	4.75	
		Ability to get support from other than family members and relatives in case of hardship	0.526	3.89	
		Ability to get loan from family and friends in case of hardship	0.570	4.22	
	Shelter (13.02%)	Participation in Community Issues	0.768	5.68	
		Building types (Material)	0.675	4.99	
		availability of electricity	0.564	4.17	
		Sanitation (latrines)	0.521	3.86	
		Assets and Property (17.77%)	Land owned	0.614	4.54
			Tractor	0.566	4.19
			Farm equipment	0.655	4.85
Live stock (4.04%)	Tube well	0.567	4.20		
	Sheep/Goat	0.544	4.03		
	Health within Household (5.25%)	Availability of health care services	0.710	5.25	
		Gold / silver / bonds	0.504	3.73	
Economic Empowerment (57.10%)	House Accessories (30.05%)	Television	0.559	4.14	
		Cell phone	0.632	4.68	
		Refrigerator	0.542	4.01	
	Air-conditioner	0.576	4.26		
	Personal computer or laptop	0.676	5.00		
	Car / jeep	0.572	4.23		

The results of the factor analysis are presented in Table 3. The results show that participation in community Issues (loading value 0.768) and membership in formal or informal organizations or associations (loading value 0.642) are the most significant factors that constitute social empowerment. They

can argue against any wrong decisions and in addition, they are actively participating in local and social decision making. All of the thirty six reveal factors are associated to the collective components; the cheapest extraction value is 0.504 (Gold / silver / bonds).

Figure 1 shows that economic empowerment contributed higher (57.1 percent) to the socio-economic empowerment compared to the social empowerment that represents 42.90 percent. -

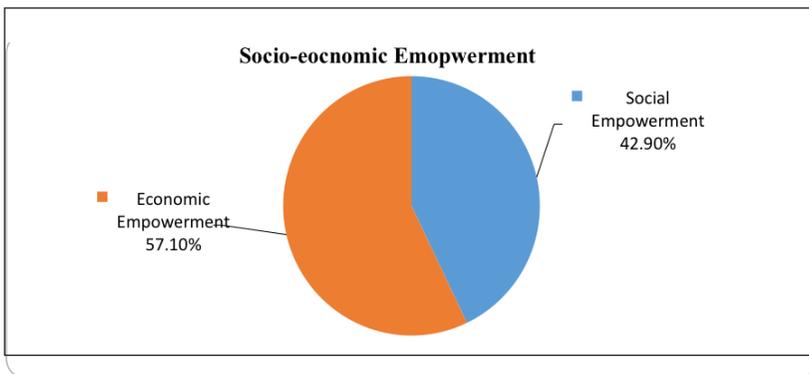


Figure 1: *Percentage Value of Socio-economic Empowerment*

Figure 2, illustrates the percentage of socio-economic empowerment in sub-factors. The diagram shows that household accessories contributed a large portion (30.05 percent) to socio-economic empowerment. Groups and networks contributed 18.54 percent, assets and property contributed 17.77 percent and shelter (home) contributed 13.02 (Figure 2).

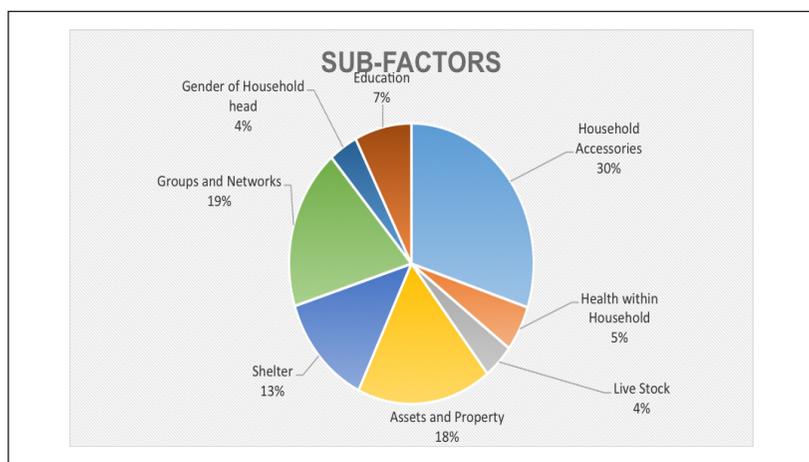


Figure 2: *Percentage value of Sub Factors*

SOCIAL EMPOWERMENT

The results of the study show that Social empowerment consists of four sub-factors namely; gender of household head, education of household, groups and networks, shelter and these four indicators further consist on thirteen indicators. This study found ten indicators significant from social empowerment whose extraction value is greater than 0.5 that represent 42.90 percent contributes in socio-economic empowerment as shown in figure 1 and remaining three indicators are dropped. Now, we check further its distribution in sub-factors, how much contribution each sub-factors and then how much percentage of each indicator within the sub-factors represents in socioeconomic empowerment. The percentage share of each of the significant factors contributed to social empowerment is discussed.

Gender of Household Head: Households participation in social and political matters in rural areas is determined by gender of head of household. Rural poverty is strongly influenced by gender of household head[□] and it represents 4 percent socio-economic empowerment as shown above in figure 2.

Education: Employment opportunities have been set better as a result of high educational ability, especially the rural competition a best knowledge of growing crops with new agricultural technologies as well as associated practices. The results show that two indicators are significant namely: education of head of household and average education of the household with factor value 0.507 (3.75 percent) and 0.511 (3.78 percent) respectively. Education represents 7.53 percent socio-economic empowerment as shown above in figure 2.

Groups and Networks: This study used four variables to measure groups and networks, namely: membership in formal or informal organizations or associations, ability to get support from other than family members and relatives in case of hardship, ability to get loan from family and friends in case of hardship and participation in community issues and its factor loading is 0.642 (4.75 percent), 0.526 (3.89 percent), 0.570 (4.22 percent) and 0.768 (5.68 percent) respectively. Groups and networks contribute 18.56 percent in socio-economic empowerment which shown in figure 2.

Shelter: Socio-economic empowerment has been affected through quality of shelter house and type of shelter. The poor household also live in more risk and uncertain condition, poor sanitary facilities that affect directly to their health and that may influence less productivity of household members.

On the other side, good housing atmosphere leads to good health and provide the base for enhancing economic productivity within the household and enhance social empowerment. Five components were taken to explain shelter in current study namely; service indicators focused on the availability of electricity, types of building (type of house martial and size), own

house/rented, and the size of house. Environmental indicator is concerned the level of sanitation system (latrine) but only three indicator has found significant namely; type of building with loading value 0.675 (4.99 percent), the availability of electricity with loading value 0.564 (4.17 percent) and sanitation system (latrine) with extraction value 0.521 (3.86 percent). Shelter represents 13.02 percent contributed to socio-economic empowerment of the rural household and enhance social & economic empowerment.

ECONOMIC EMPOWERMENT

Economic empowerment comprise four sub-factors namely; assets and property, livestock, household health, and household accessories. Out of total twenty three indicators, thirteen indicators were significant in economic empowerment whose extraction value is greater than 0.5 that represent 57.10 percent contributes in socio-economic empowerment as shown in figure 1 and remaining ten indicators whose extraction value is lesser than 0.5 were therefore dropped. The percentage shares of these sub-factors are discussed below.

Assets and Property: Households possess various productive assets that may generate income level and affect social values. Five indicators were used to measure the current level of assets and property of household, namely; land rented, land owned; tube well, farming equipment and tractor. The results of the study show that only four indicators were significant namely; land owned, tractor, farm equipment and tube well with loading value 0.614 (4.54 percent), 0.566 (4.19 percent), 0.65(4.85 percent) and 0.567(4.20 percent) respectively (Table 3). Assets and property represent 17.77 percent of socio-economic empowerment of household.

Livestock: Rural households generally rear livestock as important productive assets in the rural economy of Pakistan that positively enhances the income of rural households. The study utilized two indicators to computing live stock of their household, namely; cow/buffalo and sheep/goat[□] but found only one indicator significant namely; sheep/goat with loading value 0.544 that represent 4.03 of socio-economic empowerment of the rural household.

Health Status of Households: The study used two variables to analyze health of household, namely: disease status and availability of health care services (See also; Chudhary, et al., 2009). The results of the study show that the availability of health care services was significant with loading value 0.710 that represent 5.25 percent socio-economic empowerment of household.

House Accessories: This study used fourteen indicators to measure household accessories. Household accessories contain material goods which enhance economic empowerment of household, namely: separate kitchen, motor-cycle, sewing machine, car/jeep, personal computer, water pump, washing machine, air conditioner, room color, refrigerator, cell phone,

television, radio and gold/silver/bonds. The results of the study show that seven indicators were significant-namely; gold/silver/bonds, television, cell phone, refrigerator, air-conditioner, personal computer/laptop and car/jeep with extraction values 0.504 (3.73 percent), 0.559 (4.14 percent), 0.632 (4.68 percent), 0.542 (4.01 percent), 0.576 (4.26 percent), 0.676 (5 percent) and 0.572 (4.23 percent) respectively. Household accessories represent 30.05 percent socio-economic empowerment of the rural household.

CONCLUSION

Socio-economic empowerment index was constructed for the first time for measuring household poverty of Pakistan by using two main variables economic empowerment and social empowerment. Eight sub-factors were identified namely; education, gender of household head, groups and networks and shelter from social empowerment and assets and property, livestock, health condition of households and household accessories from economic empowerment. Sub-factors further consist on twenty six indicators namely; Education of head of household, Average education of the household, gender of household head, membership in formal or informal organizations or associations, ability to get support from other than family members and relatives in case of hardship, ability to get loan from family and friends in case of hardship and participation in community issues, Building types (size and type of martial), The availability of electricity, Sanitation system (latrines), Land owned, Tractor, Farm equipment, Tube well, Sheep/Goat, Availability of health care services, Gold / silver / bonds, Television, Cell phone, Refrigerator, Air-conditioner, Personal computer or laptop and Car / jeep. Principal Component Analysis (PCA) is used for deriving weights for the policy variables. In current study shows that 42.90 percent socio-economic empowerment represent by social empowerment and 57.10 percent represents by economic empowerment. Social empowerment has further four Sub-factors; education, gender of household head, groups and networks and shelter that represents 7.53 percent, 3.80 percent, 18.54 percent and 13.02 percent socio-economic empowerment respectively.

Economic empowerment also depends further four sub-factors namely; assets and property, livestock, health within household and household accessories that represent socio-economic empowerment 17.77 percent, 4.04 percent, 5.25 percent and 30.05 percent respectively. The study concluded that the above stated variables are significantly contributed to socio-economic empowerment of rural households. Current study might be helpful for government to formulate and implement effective poverty reduction policies for rural households by enhancing socio-economic empowerment. EMPI computed in this study can be used in further research to evaluate the impact of Socio-economic empowerment on different economic indicator at micro and macro level in Pakistan. This will help to determine whether socio-economic empowerment is affecting other economic indicator significantly or not.

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