

Nate Knuffman
Environmental Commitment Among the States**Introduction**

Over the last three decades, the environment has become established as a major issue on the American political agenda (Elliot, Regens, and Seldon 1995). Into the 1970s, rising public concern about threats to the environment resulted in changes in government policies at all levels. The US adopted an extensive number of major environmental and resource policies which imposed increasingly stringent standards on industry. New institutions, like the US Environmental Protection Agency, were created to manage environmental programs and spending was greatly increased for these programs. However, under the Reagan administration in the 1980s, a conservative policy agenda was implemented which accelerated devolution and resulted in large cuts in the budgets of the EPA and other agencies.

This "New Federalism" has definitely had its effects on the role of the states in the policy process, especially in the area of environmental policy (Vig, Kraft 1994). "At the very least, the Reagan administration's decentralization policy suggests an increased emphasis on the role of the states in environmental management" (Lester 1990). Research into the extent to which the states have met this challenge has shown a wide variance in commitment to environmental protection among the states. The purpose of this research is to address why some states are more committed to environmental protection than others. More specifically, this research deals with how economic factors and political influences affect environmental policy outputs among states.

Research attempting to explain the variance in commitment to environmental protection among states is important for various reasons. In accounting for the determinants of state environmental commitment, we are able to evaluate state government's responsiveness. Which interests are responded to in policymaking? Identification of these factors also may allow evaluation of the capacity of state governments to deal with serious environmental problems. Understanding why states behave in certain manners provides a solid base for formulating political strategies that might influence deficient states to become more responsive. This is particularly important in an era of political devolution.

Theory and Literature Review

This research differs from previous studies for several reasons. Most studies on comparative environmental commitment across states have examined specific policies, while my research seeks to understand state commitment to protection more broadly. This is not an attempt to question the validity or

usefulness of more specific policy analyses. However, broad-based measures of policy commitment are also important. After all, certain states may excel in one specific area of protection, while remaining deficient in many others (Hays et al 1996). Studies that have attempted to assess states' commitment to a full range of environmental policies, (e.g. Hays et al 1996), have not measured state environmental policy in both fiscal and non-fiscal measures, which is strongly recommended for future research by James Lester (1990). Research which incorporates both measures (Agthe, Billings, and Marchand 1996) has typically excluded important theoretical variables such as industrialization, public opinion liberalism, and political culture. In fact, no previous research appears to have incorporated political culture.

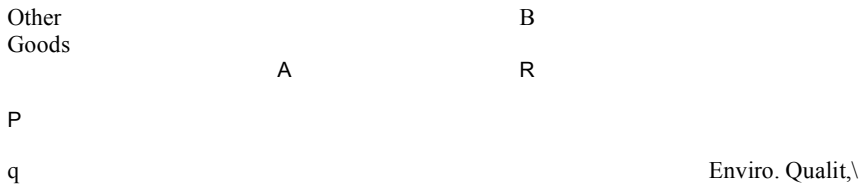
There exists a substantial amount of literature pertaining to the causes of variance among states in policy outputs. The various determinants, which have been theoretically developed and often used in previous research, can be classified into two major groups: economic factors and political influences.

Economic Factors

Economic factors have been found as important determinants in various past studies. Thomas Dye (1966) and Winters (1976) determined that economic variables are the best and usually the only significant predictors of state policy. The "ability-to-pay" theory asserts that states with greater economic resources are assumed to spend more on environmental protection. The logic behind this assertion stems from the idea that states with more money can more likely afford services and can innovate with responsive new techniques. Various studies have shown that a state's economic resources are related to environmental protection. States with higher per capita income have been found to be more committed to specific policy areas in hazardous waste (Lester et al 1983) and air and water pollution policies by Ringquist (1994) and Lowry (1992). Assuming environmental quality to be a normal good, we would expect an individual's demand for environmental quality to rise with income. Diagram I displays this situation:

We see that a rise in an individual's budget constraint from A to B leads to an increase in his desired level of environmental quality from q to q' . A wealthier person would want to purchase more environmental quality. Therefore, theory and past research suggest that wealthier states will be more committed to environmental protection.

Figure I
Environmental Quality as a Normal Good



The "severity" argument suggests that extensive industrialization and concentrated population create severe pollution problems, which creates strong pressures for environmental protection commitment. It may seem logical to assume that manufacturing firms would oppose environmental regulation because of increased costs in production. However, manufacturing firms may favor regulation because the regulatory costs and policies act as barriers to entry, causing new, smaller firms to face high regulatory costs when competing for the established firms' markets. Williams and Matheny (1984) argue that businesses, especially large oligopolistic firms, are more likely to support socialization of the costs of production. These theories seem consistent with research showing that states with large numbers of manufacturing firms are more likely to have stronger air and water protection policies (Ringquist 1994; Lowry 1992). Consequently, it is expected that more industrialized states will have a stronger commitment to environmental protection.

This "severity" argument also asserts that concentrated population causes an increase in pollution problems, which ultimately applies pressure to better meet environmental protection. However, this concentration of population may allow states to spend less per capita and exert less effort at policy delivery in more urban areas due to economies of scale. Research findings of Agthe, Billings, and Marchand (1996) support this theory. Yet with theoretical arguments in both directions, an increased level of urbanization in a state may increase or decrease commitment to environmental protection.

Political Influences

The greatest evidence for claiming a significant role for the influence of political variables in state policy extends from research done by Erikson, Wright, and McIver (1989). They found that state opinion liberalism had a strong impact on public policy in the states, both directly and indirectly, even when controlling for economic variables. Liberal ideology tends to look more favorably upon environmental regulation. Since state policy should reflect the attitudes and priorities of a state's people, it seems logical to expect that the greater the percentage of people who identify themselves as liberal in a state, the stronger that state's commitment to environmental protection.

A measure of the professionalism of a state legislature has often been used in previous research in comparative state policy. More professional state legislatures will be more responsive to citizen needs and more innovative in policymaking (Grumm 1971). Better educated members, expanded resources, and more staff support should allow professional legislatures to be able to better examine issues, resulting in more innovative and comprehensive policies. These advantages should be particularly beneficial in the complex and technical area of environmental protection, with a more activist legislature seeking a stronger commitment to environmental protection. Therefore, theory and past research suggest that states with more professionalized legislatures will be more committed to environmental protection.

Political culture has never been directly included in previous research. Yet there is strong theoretical support for the effect of political culture to be included in research examining the variance of commitment among states. Political culture is an aspect of a state's political environment that is independent of such concepts as ideology and regionalism. Political culture is particularly important as the historical source of differences among various states in concerns, habits, and attitudes that exist to influence political life (Elazar 1966). It can be defined as "the particular pattern of orientation to political action in which each political system is embedded." (Elazar 1966). In "moralistic" political cultures, individualism is tempered by a general commitment to advancing the public interest. The government is considered a positive instrument with a responsibility to promote the general welfare (Elazar 1966). This contrasts the "traditionalist" political culture, which views government intervention in a negative light. The moralistic outlook facilitates a greater commitment to active government intervention. This theory can be applied to the realm of government intervention in environmental protection, especially considering that the environment is often considered a public good. Consequently, it is expected that moralistic states will be more committed to environmental protection than non-moralistic states.

Organized interests have often been thought to have an important and distinct influence on the political process. Lindblom (1977) claims that domi

nant groups and interests have the ability to control the political agenda. Research shows that groups like the Sierra Club have had a large amount of influence on program content and implementation at the national level (Meinick 1983). Previous research at the state level also indicates that well-organized interest groups are more committed to hazardous waste policy (Lester et al 1983) and to overall environmental regulation (Hays et al 1996). The rationale behind the influence of these organized interests centers on the growth in public support for environmental protection and rapid increase in tile membership of environmental interest groups, which suggests political pressure should greatly influence policymakers' commitment to environmental protection (Mitchell 1990). Theory and past research suggest that tile greater the environmental interest group power within a state, the more commitment that state will have to environmental protection.

Therefore, the hypotheses examined in this research are as follows:

Hypothesis 1: Wealthier states will be more committed to environmental protection than less wealthy states.

Hypothesis 2: More industrialized states will have a stronger commitment to environmental protection than less industrialized states.

Hypothesis 3: The greater the percentage of state opinion liberalism, the stronger that state's commitment to environmental protection.

Hypothesis 4: States with more professionalized legislatures will be more committed to environmental protection than those with less professionalized legislatures.

Hypothesis 5: Moralistic states will be more committed to environmental protection than non-moralistic states.

Hypothesis 6: The greater the environmental interest group power within a state, the more commitment that state will have to environmental protection.

Derivation Of Empirical Model

My research incorporates two separate, standard regression models to test these hypotheses on two types of measures (fiscal and non-fiscal) for environmental commitment. The dependent variable, state commitment to environmental protection, will be measured fiscally by state per capita spending on the environment and non-fiscally by the Green Policy Initiatives Index. State spending data was gathered from the Council of State Governments. This measure has been used in various past research involving the assessment of comparative state environmental policy, including recent research done by Agthe, Billings, and Marchand (1994) and Dawes and Bacot (1996). The Green Policy Initiatives Index is based on the number of innovative environmental and natural resource policies each state has adopted. This measure is the most recently developed and tile broadest measure of state environmental policy commitment, reflecting a state's position relative to others

based on seventy-seven indicators (Hays et al 1996). These indicators represent the presence or absence of various innovative policies in recycling, landfills, toxic waste, air and water pollution, energy and transportation, and agriculture (Hall and Kerr 1994). This measure has been used to measure state environmental commitment in recent research by Lester (1994) and Hays et al (1996). It has also been found to be highly correlated (.88) with the other popular index (FREE) used in recent comparative state environmental research. Therefore, this index should be a valid representation of commitment to the environment at the state level.

My independent variables were operationalized in various ways. The variable used to represent wealth is income per capita. It is the most widely used and accepted measure. Industrialization is represented as the percentage of employees in the manufacturing sector of a state. This measure, used by Hays et al (1996), had significant effects. The independent variable reflecting urbanization is measured as the percentage of people living in urban areas. Agthe, Billings, and Marchand (1994) used this measure and found its influence to be significant. State opinion liberalism is measured as a percentage (liberal % - conservative %) taken from the pooled time-series data used by Erikson, Wright, and McIver (1993). Legislative professionalism is measured by a legislative professionalism factor score, which was developed by Squire. It is the most recently developed measure and is highly correlated with the other previously developed factor scores measuring legislative professionalism. It is based on three resource variables: legislator pay, staff per legislator and total days the legislature is in session. Political culture type is measured by Daniel Elazar's classification of states and allows for the use of a dummy variable for moralistic v. non-moralistic states. Environmental interest group strength within a state is measured as state membership in the Sierra Club per 1000 population. The definitions of the independent variables and their expected relationships with environmental commitment are described in Table I.

Table I
Variable Definitions and Expected Relationships

Variable	Definition	Expected Sign
Wealth (income)	State Income Per Capita	Positive
Industrialization (manuf)	Number of Employees in the Manufacturing Sector of a State per 1000 population	Positive
Urbanization (%urban)	Living in Urban Areas	?
OpinionLiberatism (%liberal)	EWM's % of Liberal Identifiers minus % of Conservative Identifiers	Positive
Legislative Professionalism (legprof)	Squire's factor score	Positive
Moralistic Culture (moral)	Elazar's Classification	Positive
Environmental Interest Group Strength (envint)	State Membership in Sierra Club per 1000 population	Positive

Model I

Model 1, which used the non-fiscal measure of the dependent variable (Green Policy Initiatives Index), performed very well. Four of the seven independent variables were statistically significant and the adjusted R square was a relatively high .72106, meaning that approximately 72 percent of the variance in the dependent variable could be explained by these seven independent variables. Of the economic variables, income was significant at the .05 level and manufacturing employment was significant at the .01 level, therefore supporting my hypotheses regarding these variables. The political variables of legislative professionalism and environmental interest group membership were both significant at the .01 level. This confirms my hypotheses that legislative professionalism and environmental interest group power are positively related to environmental commitment. The single most powerful predictor of state commitment to the environment in the model was environmental interest group power (beta weight .347947). Overall, all of the signs of the inde

pendent variables in the model indicated a positive relationship with environmental commitment except urbanicity, which had no predicted sign.

My results are comparable to those of Hays (1996). She also used the Green Policy Initiatives Index and some similar independent variables. My results regarding the political variables of legislative professionalism and environmental interest group membership further support Hays' findings that both variables were significant determinants of state commitment to the environment. However, the results of our economic variables were different. Manufacturing employment and income did not have statistically significant positive relationships in her research, while they did prove statistically significant in this research.

My results regarding the importance of income support the previous findings by Lester (1983), Ringquist (1994), and Lowry (1992), who have found income to be positively associated with state air and water pollution policies. The significance of legislative professionalism and environment interest group membership further supports research done by Ringquist (1994), who found that both variables were associated with stronger state air and water pollution policies.

Model 2

Model 2, which used a fiscal measure (state government per capita spending on environment) of state commitment to the environment, did not perform as well as Model 1. Three of the independent variables were significant and the adjusted R square was .48548, meaning that about 49 percent of the variance in per capita state government expenditures on the environment can be explained by these independent variables. The only statistically significant political variable was the measure of moralistic political culture, which was significant to the .05 level. This result does confirm my hypothesis that states of moralistic political culture are more environmentally committed compare to states of non-moralistic culture. Its coefficient indicates that states of moralistic political culture spend about 17 dollars more per capita on the environment than non-moralistic states. My hypotheses regarding the other political variables of state ideology, environmental interest group strength, and legislative professionalism were not confirmed by the results of this model.

Among the economic variables, manufacturing, employment an urbanicity were statistically significant to the .01 and .05 levels. The urbanicity coefficient indicates that a one percent increase in a state's population living in urban areas corresponds to about an \$.82 decrease in state spending on the environment per capita. The result of the urbanicity variable supports the economies of scale theory. Evidently, a concentration of population does allow state to spend less per capita and exert less effort at policy delivery. It could also indicate that more urbanized states simply spend less on the environment.

Manufacturing employment was also a significant determinant of state spending on the environment, but the relationship was in the opposite direction as expected. The possible reasons behind this result will be discussed in detail later.

Before discussing the possible reasons behind these unexpected results and the comparisons between the two models, the inherent differences between these two measures of state commitment to the environment must be realized. Both represent types of policy measures of state environmental commitment but each represent different aspects of policy decision-making. A state that spends a great amount on the environment has not necessarily implemented a broad range of innovative environmental policies and vice versa. State expenditure on the environment is a raw measure of government spending, while the GPI Index is based on specific policy indicators on a wide range of new and innovative environmental policies and may be a more valid gauge of environmental commitment.

The major problem variable of Model 2 was manufacturing employment-the proxy for industrialization-because it was statistically significant in the opposite direction as expected. Reconciling why this variable would have a significant positive relationship in one model and a significant negative relationship in the other model is important to consider. One interpretation is that as states become more industrialized, an increase in the amount of policy innovativeness is favored, while raw government spending on the environment is opposed. These new and innovative policies may tend to translate into barriers to entry in the market, therefore explaining why a more industrialized state may favor an increase in policy innovations. These same industrial benefits may not be realized by an increase in state government spending on the environment.

This result should not necessarily be rigidly understood that as a state becomes more industrialized, the level of state policy innovativeness increases while state government spending on the environment decreases. Much of the favor a more industrialized state may place on environmental commitment may be contingent upon the specific policies, relegating who bears the costs of cleanup, and the types of environmental spending particular to that state. Industrialization is certainly an important determinant of state commitment to the environment, however its direction of effect may depend on the specific environmental policies and spending programs of a particular state.

These results are most comparable to two recent studies, Agthe, Billings, and Marchand (1994) and Bacot and Dawes (1996), because they also used state environmental spending as a dependent variable. However, many of the independent variables used in both of their studies were different from the factors included in my model. Bacot and Dawes (1996) also found income and liberal ideology to have statistically insignificant effects. They did find

Table 2

Results: **Model I (GPI Index) / Model 2 (Env. Spending/Capita)**

MODEL1	MODEL2		
Variable	Coefficient	Beta	Coefficient Beta
Income	0.001794	.347914**	0.000268 0.025353
Manuf	0.147221	.254407***	-0.605427 -.508826***
Urban	-0.023428	-0.02362	-0.818241 -.401205**
EnvInt	5.074076	.347947***	1.919296 0.06401
LegProf	26.618938	.268141***	-12.629971 -0.061876
Moral	2.69878	0.089686	16.870212 .272662**
Liberal	0.116363	0.060055	-0.440328 -0.110524
Adjusted R Square: .72106	Adjusted R Square: .48548	(*)significant at the .10 level	
(*)significant at the .10 level	(**)significant at the .05 level	(**)significant at the .05 level	
(***)significant at the .01 level	(***)significant at the .01 level		

environmental interest group strength to be an important influence, however the relationship was insignificant in my Model 2. The significant importance of urbanicity in my Model 2 further supports research done by Agthe, Billings, and Marchand (1994), who found urbanicity to be significant and negatively related to state environmental spending.

It is interesting to evaluate the similarities and differences between the results of these two models. The only variable that did not exert a statistically

significant influence in either model was public liberal ideology. Within the limits of my research, a state's political ideology has little to do with its environmental commitment, despite its proven importance in various other policy research at the state and national level.

The variables that were statistically significant in one model and maintained their direction of influence in both models were income, moralistic political culture, environmental interest group strength, and urbanicity. These results support the ability-to-pay theory; higher levels of income are associated with greater state environmental commitment. States of moralistic political culture appear more committed to pro-environmental policies than nonmoralistic political culture types. Apparently, the moralistic culture does indeed have a more positive view of governmental intervention in the realm of environmental protection. State environmental interest group strength is positively related to environmental effort. Evidently, stronger environmental representation maintains environmental issues' importance, which translates into sustained environmental priorities at the state level. Both models also find that a decrease in a state's environmental commitment is associated with an increase in urbanicity. An increase in state urbanicity may allow economies of scale to be utilized in policy delivery or simply indicate that more urbanized states are less committed to the environment.

Legislative professionalism only exerted a significant impact in Model 1, which demonstrates that it is positively associated with greater state environmental commitment, at least when evaluating commitment in terms of the implementation of a broad range of specific and innovative environmental policies. More resources and staff support for legislatures does allow them to better implement a more comprehensive range of new environmental policies. Industrialization was significant in both models, however not in the expected direction in Model 2. A discussion of this result and possible explanations can be found earlier. Nevertheless, industrialization is an important determinant of state environmental commitment.

This comparison of results between both models can be related to the only previous research that incorporated a fiscal and non-fiscal measure of environmental effort, Agthe, Billings, and Marchand (1994). Overall, they found that economic variables were more powerful determinants of a fiscal measure of environmental commitment (spending), while political variables had more predictive power when commitment was measured non-fiscally (policy index). My research supports this idea that economic variables are more powerful determinants of a fiscal measure of commitment. In Model 2, two of the three economic variables were significant and the most powerful, while only one of the four political variables was statistically significant. My research does not, however, provide any conclusive evidence that political variables were more powerful determinants of a non-fiscal measure of environmental commitment. In Model 1, two economic and two political variables were significant and the respective beta weights of both classes of variables were very similar, indicating very comparable predictive strengths.

Conclusion

The results of my research are very widespread across both models, which should not be interpreted as meaning there is nothing valuable to gain from this study. Rather, this research indicates that a different combination of political and economic factors influence policy initiative and innovativeness as compared to environmental spending. The only factor that does not seem to have any affect on state environmental effort is liberal ideology, at least when controlling for the other influences in my research. The most powerful determinants of policy innovativeness were industrialization, legislative professionalism, and environmental interest group strength. States rich in these areas seem to have the most conducive environment for policy initiative and innovativeness. It also seems that states are responsive to environmental interest groups, with this factor being the most powerful predictor of policy initiative and innovativeness. However, state spending on the environment is largely a function of different economic and political factors. Urbanicity, industrialization, and moralistic political culture were the most powerful determinants of environmental spending.

There are various possible reasons why these two types of measures of environmental commitment are driven by different combinations of political and economic factors. Both are policy measures, but the non-fiscal measure (GPI index) deals with the comprehensive and innovative nature of environmental policy, while the fiscal measure (environmental spending) is based on the money allocated by the state government for the environment. This variance may have resulted because these measures are truly measuring different aspects of policy decision-making; a state that is more innovative with regard to environmental policy does not necessarily spend more on the environment. Another possible reason behind this discrepancy may be the use of unfunded mandates. Unfunded mandates can be federal mandates delineating certain state environmental standards without any additional funding. Therefore, a state could be forced to initiate environmental policies to coordinate with federal standards or choose to innovate policies to reach beyond the federal guidelines, while not necessarily allocating more money for the environment.

Future research in this area could be improved in several ways. A fiscal measure of environmental commitment could possibly also incorporate the amount of government allocation for the environment relative to aggregate state spending. A state with stronger environmental commitment would presumably allocate more money for the environment relative to aggregate spending. This would provide a supplemental fiscal measure of commitment as

dependent variable. Also, to possibly measure ideology more effectively, the ideology of the actual state legislators (elite ideology) may need to be used in addition to or in place of a public ideology measure. It is possible that the ideological preferences of the elected legislators are not reflective of the public ideology, which could possibly translate into a much different impact on policy decisions.

Future research in this area could be improved by possibly including a more direct measure of the environmental problem severity among states. Logically, a state's commitment to the environment will be greatly affected by the severity of that state's environmental problems. However, much of a state's environmental problems may only be particular to that state or region. Further, a state's environmental problems may have resulted from interstate influences, such as the movement of air and water pollution across state lines. Consequently, the difficulty surrounding environmental problem severity lies in capturing a valid measure.

Bibliography

- Agthe, Donald E., Bruce Billings, and James Marchand. 1996. "Socioeconomic and Political Determinants of State Spending on Environmental Programs." *The American Economist* 40: 1, pp.25-30.
- Dawes, Roy A. and Hunter Bacot. 1996. "Responses to Federal Devolution: Measuring State Environmental Efforts." *State and Local Government Review* 28:2, pp. 124-135.
- Dye, Thomas. 1996. *Politics, Economics, and the Public: Policy Outcome in the American States*. Chicago: Rand McNally.
- Elazar, Daniel. 1966. *American Federalism*. New York: Thomas Cromwell Company.
- Elliot, Euel, James L. Regens, and Barry J. Seldon. 1995. "Exploring Variation in Public Support for Environmental Protection." *Social Science Quarterly*, 76: 1, pp. 40-51.
- Erikson, Robert S., Gerald Wright and John McIver. 1993. *Statehouse Democracy*. Washington, DC: Congressional Quarterly Press.
- Erikson, Robert S., Gerald Wright, Jr., and John P. McIver. 1989. "Political Parties, Public Opinion, and State Policy in the United States." *American Political Science Review* 83:3, pp. 729-50.
- Grumm, J. 1971. "The Effects of Legislative Structure on Legislative Performance." *State and Urban Politics*, ed. R.I. Hofferbert and I. Sharkansky. Boston: Little, Brown.
- Hall, Bob and Mary Kay Kerr. 1994. *The Green Index*. Washington, DC: Institute for Southern Studies.
- Hays, Carol, Michael Esler and Scott P. Hays. 1996. "Environmental Commitment Among the States: Integrating Alternative Approaches to State Environmental Policy." *Publius* 26:2, pp. 41-58.

- Lester, James. 1990. "The Comparative Analysis of State Environmental Policy." *Natural Resources Journal* 30:2, pp. 301-20.
- Lester, James, James L. Franke, Ann O'M. Bowman, and Kenneth W. Kramer 1983. "Hazardous Wastes, Politics, and Public Policy: A Comparative State Analysis." *Western Politics Quarterly* 36:2, pp. 257-81
- Lindblom, Charles E. 1977. *Politics and Markets: The World's Political Economic Systems*. New York: Basic Books.
- Lowry, William. 1992. *The Dimensions of Federalism: State Governments and Pollution Control Policies*. Durham, NC: Duke University Press.
- Melnick, R. Shep. 1983. *Regulation and the Courts.- The Case of the Clean Air Act*. Washington, DC: The Brookings Institution.
- Mitchell, Robert Cameron. 1984. "Public Opinion and the Green Lobby: Poised for the 1990's?" *Environmental Policy in the 1990's*, ed. Norman Vig and Michael Kraft. Washington, DC: Congressional Quarterly Press.
- Ringquist, Evan J. 1994. *Environmental Protection at the State Level*. N York: M.E. Sharpe, Inc.
- Vig, Norman, and Michael Kraft. 1994. "Environmental Policy From the 1970's to the 1990's." pp. 3-26. *Environmental Policy the 1990's: Continuity and Change.*
- Williams, Bruce, and Albert Matheny. 1984. "Testing Theories of Social Regulation: Hazardous Waste Regulations in the American States." *Journal of Politics* 46:2, pp. 428-59.
- Winters, Richard. 1976. "Party Control and Policy Change." *American Journal of Political Science* 20:4, pp. 597-636.