

Dark Side and Light Side Influence towards An Organizational Innovation

Andrew P. Ciganek

Abstract—This study examined the influence that ‘dark side’ or negative and ‘light side’ or positive factors have towards an organizational innovation. A large-scale survey was conducted soliciting participants from a variety of industries representing organizations that had recently made the decision to implement a specific innovative technology. The results indicate that coercion has a negative influence on the decision to implement an organizational innovation while culture and climate as well as management support have a positive influence.

Index Terms—Technological innovation, negative perceptions, coercion, innovation management.

I. INTRODUCTION

Innovation can be an important source of sustained organizational success but is inherently risky since the majority of organizational innovations fail. An extensive amount of research has examined organizational innovation to better understand which factors influence innovation implementation. Factors ranging from internal capabilities to external influences have been studied in a number of different disciplines and contexts to learn more about innovation implementation. Under researched in innovation studies are ‘dark side’ predictors - innovation triggered in response to negativity and conflict [1]. This study examines the influence of ‘dark side’ or negative and ‘light side’ or positive predictors towards an organizational innovation. This study focuses on the impact that negative and positive predictors have on perceptions of the organization’s decision to implement an innovation. Perceptions of decision satisfaction are important to examine since its absence can stimulate a disposition to resist organizational innovation [2]. Perceptions of decision quality are also examined because when they are present, decision quality can foster commitment towards the decision that was made [3]. A literature review is next discussed followed by the research model and hypotheses. The research methods and results are then presented followed by some concluding remarks.

II. LITERATURE REVIEW

An extensive amount of research only examines positive influences leading to innovation while ignoring the negative influences that can also provoke innovation [1]. This study is noteworthy because it examines both positive and negative influences which can provide a more realistic understanding

of the decision to implement an organizational innovation. Positive factors that have consistently been found to support organizational innovation are examined with a negative factor that is likely to incite organizational innovation.

A. Culture and Climate

Organizational innovation may be facilitated by a culture and climate supportive of innovation [4]. Culture and climate are similarly described as the shared perceptions of organizational members exposed to the same organizational structure [5]. Appropriate culture and climate enables organizations to do and be things for employees, customers, suppliers, and others that couldn’t be done or not done as well without [6]-[8]. Innovation emerges from cultures and climates where members recognize the appeal of innovation [9].

B. Management Support

Organizational innovation is more strongly influenced by managerial attitudes toward innovation than by environmental factors [10]. Management support entails becoming convinced and committed to the perspective that a particular innovation contributes to the organization’s success. Management support has consistently emerged as an important factor facilitating successful innovation implementation [11].

C. Coercion

Coercive, memetic, and normative pressures significantly influence an organization’s intention to adopt innovation [12]. Coercion entails persuasion by force or threat. Coercion may be driven by pressures exerted by other firms in which the organization is dependent and also pressures to conform to social cultural expectations [13], [14]. Coercive pressures accelerate the overall innovation-decision process [15].

D. Decision Satisfaction and Quality

Decision satisfaction and quality should provide useful insights regarding the influence of both light side and dark side factors towards organizational innovation. Satisfaction, the degree an organization is content with the decision made, has been widely used as a measure for innovation success [16, 17]. Decision quality is the confidence an organization has with a decision outcome. Decision quality relates to the degree in which an organization believes that the decision outcome is accurate, correct, and dependable [17]-[19].

III. RESEARCH MODEL

This study proposes a research model based on the above theoretical background (see Fig. 1). The research model

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Andrew P. Ciganek is with the University of Wisconsin - Whitewater, Whitewater, WI 53190 USA (e-mail: ciganeka@uww.edu).

hypothesizes both negative and positive influences towards an organization's decision to implement an innovation. Those negative and positive influences are expected to shape perceptions of satisfaction and quality with the decision to implement an innovation.

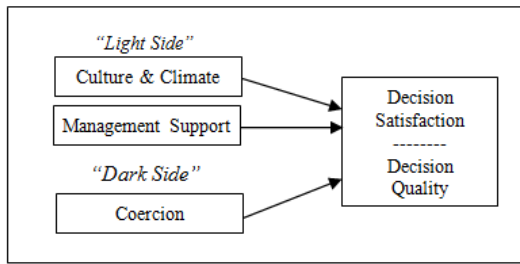


Fig. 1. Research model.

A. Culture and Climate

Results-oriented organizations exhibit risk-oriented behavior and foster a culture and climate that encourages and actively supports the use of innovation [20]. Process-oriented organizations, on the other hand, are generally resistant to change, new technology, and risk and will only exert minimal effort in their daily work tasks [20]. Process-oriented organizations are reluctant to innovate unless seriously challenged by competitors or shifting consumer preferences [21]. Organizations which are characterized as being results-oriented are more likely to positively receive innovation than organizations characterized as process-oriented. This study hypothesizes that:

H1: Individuals within a risk-oriented organization will perceive greater satisfaction and quality in the decision to implement an innovation.

B. Management Support

Management support for an innovation has the dual-effect of indicating strategic direction and conveying an innovation's importance throughout the organization [11]. Management support also fosters an internal climate that is receptive to innovation [22]. Organizations with management support for innovation should have a positive influence on perceptions of decision satisfaction and quality to implement an innovation. This study hypothesizes that:

H2: Individuals having management support for innovation will perceive greater satisfaction and quality in the decision to implement an innovation.

C. Coercion

Coercive pressures are exerted on an organization by firms in which that organization is dependent [13]. Sources of coercive pressures include resource-dominant organizations, regulatory bodies, and parent corporations [12]. Organizations that are pressured into implementing an innovation by powerful business partners likely won't receive this decision well. Organizations that are forced to make innovation implementation decisions will likely lack contentment with their decision. This study hypothesizes that:

H3: Individuals having greater coercive pressure for innovation will perceive less satisfaction and quality in the decision to implement an innovation.

IV. METHODOLOGY

This study employed a survey method to test and analyze the research model. A survey instrument was developed based on identifying appropriate and valid measurement items from previous studies. The participants in this study were solicited from a leading industry user group whose members represented a wide variety of industries and recently made the decision to implement a specific innovative technology – a service-oriented architecture. A service-oriented architecture constitutes an innovative technology for many organizations and is a style for building software applications that uses available services in a network [23]. A web-based questionnaire was administered once the survey instrument was finalized.

A. Survey Instrument

Most of the measurements employed in the survey instrument were borrowed from previously validated instruments in the innovation literature and adapted to service-oriented architectures. A pretest was performed using four judges to evaluate construct validity following the card-sorting procedures detailed by Moore and Benbasat [24]. The overall item placement ratios for the judges were exceptionally high, so no items were modified or removed from the survey instrument.

A pilot test was also performed to assess instrument reliability and validity [25]. Nine respondents from different organizations and varying industries participated in the pilot test. Slight modifications were made to the phrasing of a small subset of survey items to improve the questionnaire's readability based on the pilot test feedback.

The survey instrument items were anchored from 'strongly disagree' to 'strongly agree' using a 7-point Likert scale. Items used to measure coercive pressure, a second order construct, were borrowed from Teo, Wei, and Benbasat [12]. Items that measured culture and climate were borrowed from Hofstede, Neuijen, Ohayv, and Sanders [20], O'Reilly III, Chatman, and Caldwell [26], Litwin and Stringer [27], and Schein [28]. Items that measured management support were borrowed from Chatterjee, Grewal, and Sambamurthy [29] and Premkumar and Ramamurthy [30]. Items that measured decision satisfaction were borrowed from McKinney, Kanghyun, and Zahedi [31] and Spreng, MacKenzie, and Olshavsky [32]. Items that measured decision quality were borrowed from Mennecke, Crossland, and Killingsworth [18], Mennecke and Valacich [19], and Yoon Guimaraes, and O'Neal [17].

B. Data

There were 228 total responses to the formal survey. Several safeguards were undertaken to eliminate the possibility of an inflated and biased data set resulting from multiple responses from the same organization. Instances where multiple responses from the same company existed were identified and only the senior-most respondent was retained, resulting in a sample size of 213. An additional 59 samples were removed from respondents which indicated that their organization had yet to initiate any service-oriented architecture efforts, leaving a final usable sample of 154. The organizations included in the final sample is diverse and

reflects a wide range of demographics with respect to industry and size (see Table I).

TABLE I: RESPONDENT ORGANIZATION DEMOGRAPHICS (N = 154)

Demographic	Category	Count	Percent
Industry	Other services	33	21.4%
	Business services	29	18.8%
	Finance	21	13.6%
	Manufacturing	13	8.4%
	Retail	11	7.1%
	Communications	11	7.1%
	All others	36	23.6%
Annual Sales	under \$10 Million	31	20.1%
	\$10 Million - \$49.9 Million	15	9.7%
	\$50 Million - \$249 Million	23	14.9%
	\$250 Million - \$499 Million	9	5.8%
	\$500 Million - \$999 Million	11	7.1%
	\$1 Billion - \$3 Billion	19	12.3%
	\$3 Billion - \$10 Billion	14	9.1%
	over \$10 Billion	32	20.8%
Employees	under 50	24	15.6%
	50 - 99	6	3.9%
	100 - 249	8	5.2%
	250 - 499	11	7.1%
	500 - 999	16	10.4%
	1,000 - 2,499	16	10.4%
	2,500 - 9,999	17	11.0%
	over 10,000	56	36.4%

C. Results

This study employed the Partial Least Squares (PLS) method to test the proposed model and hypotheses. PLS is a structured equation modeling technique that can analyze multi-item constructs and explain complex relationships [33]. PLS is applicable to small and medium samples in estimation and supports both formative and reflective relationships [34, 35]. PLS is appropriate for data analysis because this study examines latent variables. PLS Graph version 03.00 (build 1126) was used to study the proposed research model.

D. Measurement Model

TABLE II: CONSTRUCT MEASUREMENTS

Construct	Cronbach Alpha ^a	CR ^a	AVE ^a
Perceived Dominance of Supplier Adopters	0.8696	0.9110	0.7191
Perceived Dominance of Customer Adopters	0.8742	0.9139	0.7264
Culture and Climate	0.8572	0.8983	0.6403
Management Support	0.9499	0.9678	0.9094
Decision Quality	0.9035	0.9327	0.7761
Decision Satisfaction	0.9534	0.9699	0.9149

a. Recommended threshold for Cronbach Alpha is 0.70, CR is 0.70, and AVE is 0.50 [36]

Internal consistency is determined by using Cronbach's alpha and Composite Reliability (CR) in order to assess the construct reliability. Convergent validity is evaluated by

using the Composite Reliability (CR) and the Average Variance Extracted (AVE) from the measures. Each of the measurement values (Cronbach's alpha, composite reliability, and average variance extracted) were well above the recommend thresholds (see Table II).

E. Structural Model

The structural model and hypotheses were analyzed examining the path coefficients, which are similar to the standardized beta weights in a regression analysis, and their significance level [37]. Following Chin [38], bootstrapping (with 300 resamples) was performed to obtain estimates of standard errors for testing the statistical significance of path coefficients using t-tests. PLS estimates path coefficients and correlations among the latent variables at the structural level along with the individual R² and average variance extracted for each of the latent constructs [33].

F. Hypotheses Tests

Each of the hypothesized relationships were statistically significant (see Fig. 2 and Fig. 3). 36.9% of the variance for perceived decision satisfaction was explained in the proposed research model with management support having the strongest effect. 31% of the variance for perceived decision quality was explained in the proposed research model with management support as well as culture and climate respectively having the strongest effects.

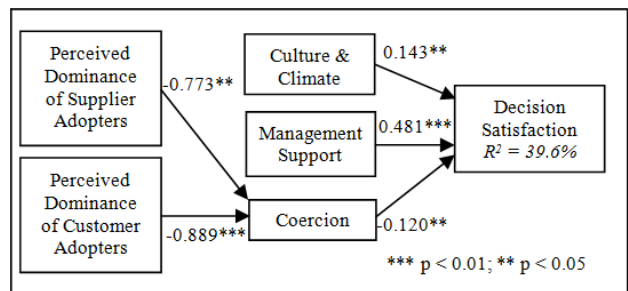


Fig. 2. PLS results – decision satisfaction.

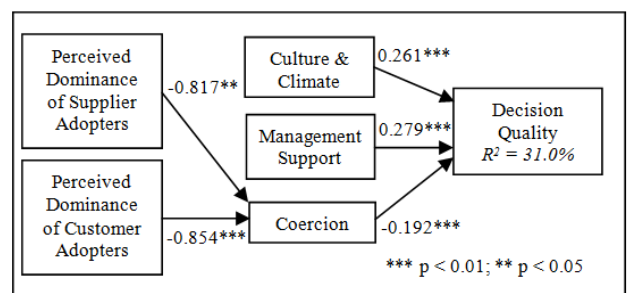


Fig. 3. PLS results – decision quality.

V. CONCLUSION

This study examined the influence that ‘dark side’ or negative and ‘light side’ or positive factors have towards an organizational innovation. A large-scale survey was conducted and the results indicate that coercion has a negative influence on the decision to implement an organizational innovation while culture and climate as well as management support have a positive influence. This research has implications for both practitioners and researchers since the study findings reveal factors that

influence perceptions towards an organizational innovation, including a 'dark side' predictor which is under researched in innovation studies. Both supplier-based and customer-based coercive pressure nearly equally impair perceived decision quality and perceived decision satisfaction. External pressures to implement an innovation fosters negative perceptions toward that innovation. These negative perceptions may become significant barriers to innovation success if they are not addressed. Management should clearly convey an innovation's benefits using case studies or initiate their own pilot projects to demonstrate its value and mitigate negative perceptions. Future research may expand upon these findings by examining additional 'dark side' predictors and their role in either hindering or enhancing organizational innovation efforts.

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Andrew P. Ciganek is an associate professor of Information Technology at the University of Wisconsin-Whitewater. His research interests include examining the managerial and strategic issues associated with the decision-making process of innovative technologies. His research has appeared in the *Journal of Business Research*, *Behaviour & Information Technology*, *Enterprise Information Systems*, *Online Information Review*, *Information Development*, and *Computers & Education*, among others. He earned his Ph.D. in management science with a concentration in MIS from the University of Wisconsin-Milwaukee.