

**ACHIEVING COMPETITIVE ADVANTAGE THROUGH HUMANWARE
ADOPTION: SPECIAL REFERENCE WITH RICE MILLERS OF AGRI BUSINESS
SECTOR IN SRI LANKA**

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Abstract

In Sri Lanka, an increasing number of rice production technologies and management techniques have been introduced. Despite the introduction of the rice production technologies, rice production has not reached a required level of standard. This study therefore analysed the factors associated with adoption of improved humanware components in rice production industry and the culture of the organization in this regard. Random sampling technique was used in selecting 173 rice producers from the Eastern Province of Sri Lanka and 50 millers in the North Central Province (NCP) who possesses a well-developed rice production facility in order to benchmark the performance of the millers in Eastern Province. Data were collected with the aid of a structured questionnaire and analysed using descriptive statistics with correlation and regression analyses. The result shows that the organizational culture has a positive relationship with technology adoption. Especially the dimensions of organizational culture such as institutional behaviour, corporate culture and organizational structure show moderate relations while degree of innovativeness and changing attitudes were at negligible relations among Eastern millers. It emphasizes that the rice millers have to improve their change of attitudes and innovation to do a successful business. A higher level of acceptance and relation was shown between all dimensions of the variable in North Central province's rice millers. This was proved that a high level of practices in organizational culture helps to NCP millers to get competitive advantage in the business. Organizational culture factors need to be taken into consideration by the eastern millers when the changes are incorporated with practices in technology perspectives.

Keywords: *Humanware Components Adoption, Rice production, Organizational Culture, NCP*

Background of the Study

Today's business environment is very volatile with advanced technologies, disappearance of boundaries between national markets, altered expectations of customers and changing externalities. Increasing complexity and uncertainty in the world, businesses are under constant threat from global forces. Business models that worked and created value for businesses and the organization need to find innovative ways of restructuring their competitive basis.

Historically, scholars have recognized that technological change or technological innovation plays a significant role in a firm's productivity, which in turn can lead to competitive advantage (Porter, 1987). Competition is the name of the game in the 21st Century and that technology is the ultimate means for achieving competitive advantage, perceptions of the meaning of technology vary among different disciplines. As world becomes increasingly more technology-driven and global competition

continues to intensify, the technology available to a firm will be required to become more sophisticated. Information technology can play a significant role in augmenting your competitive advantage, but businesses must ensure that the time, money, and energy they spend on IT is properly placed.

Food habits and demands for foods are increasing because of the globalization and industrialization. Agro- based foods are not exceptional. To satisfy the demand, right production with appropriate technology is needed. Low levels of technology adoption creating low profitable business environment in the sector. Many agriculture dominant countries, like India, China, and Thailand are getting development through absorbing new technologies in the agro industry. In the context of Eastern region of Sri Lanka, there is need to adapt innovative culture in the agro industry in the Eastern region of Sri Lanka. This research is to demonstrating that technology is a tool that achieving and sustaining a competitive advantage is directly related to the level of sophistication of those components. Higher levels of sophistications will be achieved through technological innovation when they effectively managed. But, to effectively manage technological innovation, a clearer understanding of technology is required. The main objective of this study is to find the relationship between the organizational culture and technology adoption, especially on human ware adoption to achieve high levels of business transformation in the agribusiness sector.

Theoretical Framework

Food safety is one of the most critical topics in rice processing today. There is a perceived lack of trust from consumers about the safety of their food supply and they are consequently becoming more and more conscious of the origins of the products they buy. Current global rice production falls far short of projected demand. Thus, requires an increase in rice production over the next decades. This cannot be done by increasing yield alone and requires greater

efficiency and quality control throughout the supply chain. Closely linked to food safety is quality. It is vital that millers increase yield and reduce wastage if the industry is to meet demand.

Human capital is the knowledge, skills, competencies, and similar attributes embodied in individuals that facilitate the creation of economic, social, and personal well-being. Human capital is the most important input in the knowledge-based economy. Human capital includes training, experience, judgment, intelligence, relationships, and insight of individual managers and workers in a firm (Barney, 1991). Consequently, human capital (knowledge, abilities and capabilities) provided by the entrepreneur(s) constitutes a key determinant to ensure business success (Cooper et al., 1994). Regarding human capital components, it is widely recognized that formal education positively impacts entrepreneur's decisions increasing business growth opportunities (Dunkelberg and Cooper, 1982). This information could indicate that more educated entrepreneurs have the necessary skills, discipline, motivation, information and self-confidence to attain higher growth rates in their businesses; hence, they are more likely to perceive and exploit business opportunities (Cooper et al., 1994). In addition, education provides knowledge that may help overcome financial constraints and foster business growth. Innovations improve the effectiveness and efficiency of organizational processes and products. Today one of the variables considered to have a significant influence on innovation is organizational culture (Carmeli, 2005). Since it influences employee behaviour, it may lead them to accept innovation as a fundamental value of the organization and to feel more involved in the business (Hartmann, 2006). Rashid (2004) indicates that there is an association between organizational culture and the affective, cognitive, and behavioral tendency of attitudes toward organizational change. The findings showed that different types of

organizational culture have different levels of acceptance of attitudes toward organizational change.

Transformation alters the culture of the organization by changing select underlying assumption and institutional behaviors, processes, and products; is deep and pervasive, affecting the whole organization; is intentional and occurs over time (Oxport city council, 2008). Corporate processes of transformation towards increased innovativeness, competitiveness and market orientation are furthered if firms have a definite culture of fostering change attitude. A culture supporting people's pursuit of change initiatives is important in coping successfully with the process of transformation. A positive attitude towards taking initiative is manifested in a prevailing sense that people within the organization are willingly setting out on something new, whereas a negative attitude towards taking initiative coincides with a feeling of paralysis. Cognitively, a positive attitude toward taking initiative of successes is attributed to internal factors as the result of personal initiative, rather than to external factors as the result of extraneous circumstances (Boerner, 2005).

The humanware content of technology component relates to the employee capability development in utilization of new technologies for business process activities (Sharif, 2006). Humanware is the person-embodied art-of doing- type skills technologies, and talent. This component of technology is essential for accomplishing any tool assisted task. Humanware is what people do with their technoware by applying acquired qualifications such as education, training, experiences and problem-solving ingenuity. It includes tacit knowledge and is used for transformation activities as well as managing various processes. Without relevant humanwares, any technoware is

simply non-functional or useless (Sharif, 2006).

All with this importance and relationship, the conceptual illustration depicted components of organizational culture such as degree of innovativeness, institutional behaviour, corporate culture, organizational structure and changing attitudes are influencing on technology adoption through humanware components.

Research Methods

This study was designed to conduct through quantitative approach in two phases. The first phase uses a questionnaire among eastern millers and at the second phase, some of rice millers in the North Central Province were selected with the objective of benchmarking their performance with eastern millers. Random sampling technique was used in selecting 200 rice producers from the Eastern Province and 50 millers in the North Central Province (NCP) who possesses a well-developed rice production facility the Province.

Results of the Study

Among organizational culture elements, the highest scoring for corporate culture of rice millers' acceptance for business development could be probably due to the fact that the rice millers' perception towards maintaining corporate culture reflects the active participation in the business. The low mean value for changing attitudes of rice millers showed that they averagely committed to changing attitudes. Further, the humanware adoption recorded higher values among benchmarked millers. This indicates that they arranging the work properly for better business processes.

Table 1. Descriptive Statistics of Organizational Culture

Dimensions of the variable	Eastern Province		North Central Province	
	Mean	Standard deviation	Mean	Standard deviation
Degree of innovativeness	3.70	0.543	4.41	.40013
Changing attitudes	3.44	0.707	4.02	.69122
Institutional behavior	3.53	0.671	4.45	.57074
Corporate culture	4.12	0.357	4.64	.47337
Organizational structure	4.02	0.830	4.62	.50233
Humanware	3.41	0.619	4.10	0.589

(Source: Survey data)

The perception of rice millers in both provinces is depicted by different weights of mean. Mean for the degree of innovation indicates that the benchmarked millers have more innovative culture in the business than the Eastern sample. The change of attitudes mention that the rice millers' perceptions are at a moderate level which helps to develop further in the industry. Perception of institutional behavior indicates that the existing institutional behavior is also very important for the improvement of rice production business of the benchmarked millers and it is proved as important by the Eastern province millers in particular aspects. Corporate culture was at a high value for both. organization structure explains by high levels of acceptance of the structure of firms by both parties, but it was higher with the bench marked millers when it is compared to the Eastern millers.

The strength of the variables was analyzed through correlation analysis. Accordingly, the degree of innovativeness of the organizational culture was found at low correlation with humanware adoption among the Eastern millers while it plays a key role in bench marked millers. Further, changing attitudes on organizational culture was found low correlating with humanware

adoption among the Eastern millers, while it was at moderate correlation with benchmarked rice millers. The findings suggest that the changing attitudes of the organization would relate to higher level of humanware adoption.

In addition, the strength of the correlation that exists among institutional behaviour of the organization was low with the Eastern millers which illustrates that the institutional behavior takes an important role in humanware adoption decisions. Nevertheless, there was a high moderate correlation with humanware adoption at significant with the benchmarked millers which specially emphasizing the fact that institutional behavior of the organization plays an important role at a significant level for a successful business. Further, the strength of the correlation that exists among corporate culture was at a moderate with humanware adoption in both millers. This explains that the corporate culture is induced to humanware adoption, and it emphasizes that the corporate culture has taken an important role for business improvement. organizational structure with humanware adoption was at low, in Eastern millers and it was found a moderate relation with the benchmarked millers.

Table. 2 Correlation matrixes between dimensions of organizational culture and humanware adoption

Dimensions of the variable	Eastern province		North Central Province	
	Humanware Adoption	P value	Humanware Adoption	P value
Degree of innovativeness	0.188*	.013	0.347*	0.013
Changing attitudes	0.163*	.032	0.495**	0.000
Institutional behavior	0.319**	.000	0.533**	0.000
Corporate culture	0.425**	.000	0.495**	0.000
Organizational structure	0.342**	.000	0.543**	0.000

(Source: Survey data)

Further the regression results reveal that the organizational culture is the predictor of humanware adoption. This is summarized as follows;

Table. 3 Regression results

Variable	B	R Square	Adjusted R Square	F	p
Organizational Culture	0.366	0.064	0.059	11.718	0.001

Dependent variable: Humanware

It's demonstrated that organizational culture is a significant predictor of humanware adoption. It explains about 11.718% of the variation of the humanware and further revealed that the value of $R^2 = 0.064$, denoting that the organizational culture explains 06% in of the variation in the adoption.

Conclusions and Interpretations

57.2% of the Eastern rice millers were adopted to moderate levels, while 21.9% at low levels of adoption in relation to humanware components. Further, 20.8% were represented to high levels of adoptions. The survey results indicate that most of the Eastern millers have moderate level with regard to this component, saying that the millers are committed to employee development at an average level. At the same time, benchmarking study reveals that 70% were at high levels of humanware

components adopters. Only 4% of them at low levels while 26% of rice millers showed to moderate level. The results proved that the NCP millers are adopted to improved organizational performance. Government support programmes were influence to achieve a higher level of humanwere adoption. Training programmes of employees, awareness program of the rice millers was contributed to these achievements. In contrast, the Eastern millers mentioned that they did not utilize much of the training programs.

Majority of the NCP millers have shown a high level of humanware adoption, when they had extended the business up to export and national market. However, significantly, no one among the Eastern millers has involved in export business. The reasons were suggested by the Eastern millers that they feel their product is not maintained the quality up to the standards of the export market. However, there are some deviations in relation to the focused markets. Up and

middle price focused markets rice manufacturers showed a high level of humanware components whereas low price focused marketers showed moderate level in NCP. The same focused group in the Eastern millers had moderate adoption. This reveals a large percentage of rice millers focused on high price segment among benchmarked millers. High and middle price marketers of the Eastern province fall into moderate levels of adoption while the same levels of adoption depicted by low price focused marketers in NCP. NCP sample shows the tendency to develop employees for business development in terms of maintaining the quality. Eastern millers were not maintained the quality and addicted to domestic business was the reason to this moderate adoption.

Further, the variation was recorded with regard to production capacity as well. Majority who produced above 31 metric tons in the Eastern province were adopted a moderate level whereas below 30 metric tons producers were under low adopters. Anyhow, those who produce 21-50 and above 50 metric tons rice producers showed higher levels of humanware adoption in NCP millers. The survey explained that the sample of NCP committed to increase human development at high level even among the low volumes of producers. In contrast, the large volumes of rice producers in the Eastern province showed moderate adoption. Moreover, no millers in the Eastern province proved that they were at high humanware adoption even though they employed a number of employees. The mills who employed above 11 employees showed at moderate while others were low level adopters. However, the millers in NCP who employed more than 16 employees were adapted to high humanware while those who employed above 11 employees showed moderate adoption. Further, a moderate adoption prevails those who have employed above 06 employees in NCP. The result says, the millers of the benchmarked sample understood the values of human capital development so that they were committed to new practices.

Recommendations and Managerial Implications

Transformation of a business is achieved through redesigning organizational structure, processes, human resources management practices, and technology. It also can be achieved in terms of a change in the organization's culture. Evidently, this study proved that the redesigning the components of organizational culture in the rice mills should be done.

The employee value in the sector must be recognized in great extent when compared to the jobs in other sectors. The wages and conditions offered by the employers are generally useful to gauge the quality of life of employees in a job. The traditional view of rice mills' business employment is, that it offers unstable jobs with low salaries. The wage levels are good indicators of the contribution that jobs make to the economic well-being of employees. Recommendations in this regard should be forwarded to policy makers as well as to the owner-mangers to consider to formalize the jobs. The concept of quality of jobs, which is influenced by wages and conditions of employment, is still evolving and the employers and the job holders have different views about this. In addition, several opinions were revealed by the rice millers; that people are not interested in the sector because of low levels of identity in the society for the people. Therefore, when people give an identity as well as job secures in the industry through formalizing the job and education, the sector improves further like others.

Organizational culture has not defined accurately among rice millers. Researcher recommends the following with respect to organizational culture. When the changes incorporated with practices in technology perspectives, new cultural statements and premises must be shared with employees throughout the firm. It may be communicated through speeches in the meetings, informal discussions, formal presentations, workshops and so on. Further, the new culture has to be institutionalized by

rewarding employee practices and activities that are consistent with the desired values and staffing key positions with individuals who could understand and are committed to cultural change. Employees should be formally trained.

This study conducted in the Eastern and North Central provinces of Sri Lanka should be replicated in other provinces as a mean to assess the reliability of the results. This will assure the development of existing practices that addresses more precisely the needs of the rice mills' business population in the entire country.

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