

CHAPTER VI: DEVELOPMENT OF A SUGGESTED MODEL

Data Analysis

Connection Analysis

A final suggested model was built after creating the practical-use assortment-planning model. The interviews for developing the practical-use, assortment-planning model used a set of activity cards and questionnaires based on the conceptual model; therefore, the practical-use assortment-planning model was already based on the conceptual model. Since, discrepancies between the two models existed, connection analysis was required to build the final suggested model (Tesch, 1990).

To prepare the connection analysis, the researcher made two sets of activity cards, one using a set of diagrams from the conceptual IDEF0 model and one using a set of diagrams from the practical-use IDEF0 model. The conceptual model used blue paper, and the practical-use model used yellow paper. Each card included detailed information of the function name: numbers, connection arrows, and explanations of the variables. Five experts, who had a general knowledge of retail buying as desired for the connection analysis and no benefit from this research, compared the two sets of diagrams for equivalency. This expertise was determined by the following standards: (a) teaching experience of clothing retail buying, (b) working experience in clothing retail company, or (c) at least one training program regarding the clothing retail business. All five experts completed graduate school or a special training program related to clothing retail buying, and three experts had more than three years of experience working in clothing retail companies.

The five experts evaluated the two sets of cards with a construct-consistency board and chose appropriate explanations for each card. When two cards of the same number had the same functional activities, the conceptual IDEF0 diagram card was discarded. When two cards of the same functional activity were in different order, the group of experts determined the order based on their judgment. The researcher translated the suggested format and explanation of the construct-consistency board into an IDEF0 model.

Validation of the Final Model

The researcher created a survey questionnaire as a summary of the suggested model (see Appendix D) and sent it to the interviewees who participated in this research. The interviewees were asked to review the suggested assortment model using the questionnaire. The questionnaire included mechanisms of the suggested model. Interviewees were asked to check the fitness of the mechanisms for each interviewee's assortment planning process by nominal-scale answers (*i.e.*, belong, not done, another step) (see Appendix D). After sending the questionnaire, interviewees were contacted by phone to be sure they received the questionnaire and to ask if they had questions related to the survey questionnaire. Five interviewees sent back the survey questionnaire, and three interviewees answered the questions by phone. Two interviewees could not be reached, because of business trip or job change.

Simple descriptive statistics were used to analyze the data from questionnaire. The majority rule, more than 50 % agreement among respondents, was used to decide the fitness of the final model. The approval from retailers increased the validity of the final suggested assortment-planning model.

Results of the Suggested Assortment Planning Model

Results of Connection Analysis

Procedure Assortment Planning

From the activity card sorting, the five experts agreed that the procedure of the conceptual model was more acceptable. At the abstract level (A0), however, few differences existed between the conceptual model and the practical-use model. All five experts agreed on '*Problem recognition*' as the first stage of assortment planning process; this was the first step in both the conceptual model and the practical-use model. One expert questioned the difference between fashion forecasting and information search. After this researcher explained the two activities, the five experts discussed order and suggested that the fashion forecasting stage should be an operational activity of the information search. '*Fashion forecasting*' was therefore considered one of the operational activities under style, color and size information searches, and the information search was the second stage of the suggested model. This change served to clarify a confusion that was noted in the interviews. Five experts agreed that '*Qualitative*

evaluation' and '*Quantitative evaluation*' could be the third and fourth stages without time order, which was similar to the comments from the interviews.

One expert asked why '*Product selection*' was changed to '*Forecasting production selection*.' This researcher explained the reason as described in Chapter 5. Three experts said that '*Production selection*' seemed to be a determinate word compared to the operational activities for product selection and suggested that '*Forecasting product selection*' seemed to be more accurate word for the activities. Five experts discussed and recommended changing the term to '*Plan product selection*,' if the term, '*Forecast product selection*,' confused the interviewees. The fifth stage of assortment planning procedure was named as '*Plan product selection*.' Five experts suggested using the words, '*Plan sales*' instead of '*Determine order quantity*.' After completing activity card sorting, the abstract level of assortment planning procedure was determined as following: (a) recognize problem (A1), (b) search information (A2), (c) evaluate qualitative value of products (A3), (d) evaluate quantitative value of products (A4), (e) plan product selection (A5), and (f) plan sales of assortments (A6) (see Figure 9-2).

Problem Recognition

Five experts said that the explanation of '*Problem recognition*' in the practical-use model was more understandable for them. However, two experts suggested and five experts agreed that the mechanisms of problem recognition could be categorized into more abstract concepts similar to the ones in the conceptual model. This researcher asked them to categorize the mechanisms for problem recognition in the practical-use model. Five experts discussed and classified the activity cards into four categories. Based on the categorization, the mechanisms of problem recognition were determined as following: (a) analyze vendor performance in sales history (A11); (b) analyze product performance in sales history (A12); (c) realize customer needs (A13); and (d) define problems and direction for new assortment (A14) (see Figure 9-4 and Appendix A-III). The operational activities for A11, A12, A13, and A14 were determined by experts' classification. The inputs, connections, constraints, and connections for mechanisms followed the explanation of the practical-use model, and summarized A11, A12, A13, and A14 (see Figure 9-5, 9-6, and 9-7).

Information Search

As mentioned in the procedure section, the activities of fashion forecasting were included in the information search. As the activities of fashion forecasting were included under

information search, activities of information search were classified into different operational levels. For the explanation of information search in the suggested model, five experts agreed that explanation for the practical-use model seemed to be more useful and detailed. Therefore, the explanation of the information search in the suggested model followed the one in the practical-use model.

Compared to the practical-use model, '*Information search*' was categorized as style information search, color information search, and size information search. However, the operational mechanisms of each style, color, and size information search were categorized differently by experts. Five experts categorized the mechanisms of style, color, and size information search by three information types: the new trend information (A211, A221, and A231), current and past situation (A212, A222, and A232), and conclude assortment directions (A213, A223, and A233) (see Appendix A-III) and created a consistency across the three similar variables (*i.e.*, style, color, size). The mechanisms of new style trend search and color trend search were adopted from the mechanisms of fashion forecasting in the practical-use model (see Appendix A-III). The mechanisms for current and past sales and information summarization followed the information search mechanisms in the practical-use model (see Appendix A-III). Inputs, connections, constraints, and outputs were adopted from the practical-use model and specified for each mechanism. Based on the above mechanism categorization, IDEF0 diagrams of information search were created for the suggested model (See Figure 9-8 to Figure 9-35).

Qualitative Evaluation

Five experts chose the mechanisms of '*Qualitative evaluation*' from the practical-use model for the suggested model. Five experts agreed that qualitative evaluation could be classified into style, color, and size qualitative evaluation; however, they suggested summarizing the mechanisms of these evaluations into more abstract concepts, which made the model easier to follow without losing details.

Five experts classified the mechanisms of '*Style qualitative evaluation*' into four categories: (a) define merchandising concept (A311); (b) predict the product sales ability (A312); (c) get opinions (A313); and (d) organize evaluation results (A314) (see Figure 9-38). From the classification process, the mechanisms of A311 to A314 were determined, and inputs and constraints of the mechanisms were adopted from the practical-use model (see Figure 9-37 to Figure 9-42). The mechanisms of color qualitative evaluation were summarized into five

categories: (a) identify color palettes (A321), (b) consider vendor's offering colors (A322), (c) consider color match with style (A323), (d) gather opinions (A324), and (e) organize evaluation results (A325) (see Figure 9-44). The mechanisms of these activities were determined by experts' classification. Inputs, constraints, and outputs for the mechanisms were adopted from the practical-use model (see Figure 9-43 to Figure 9-49). In the practical-use model, the mechanisms of size qualitative evaluation were categorized into eight operational activities (see Appendix A-II). Experts suggested that the activity, '*Watching fit*,' could include the mechanisms, considering style, defining size range by fabric attribute, and considering vendor size offer. Size qualitative evaluation was therefore summarized into five operational mechanisms: (a) define size range of target customer (A331), (b) distinguish size range well sold past (A332), (c) define needs for new size range (A333), (d) watch fit of samples or actual products (A334), and (e) organize evaluation results (A335) (see Figure 9-51). Inputs, constraints and outputs of the above activities followed the practical-use model (see Figure 9-52 to Figure 9-53).

Quantitative Evaluation & Product Selection

Five experts compared '*Quantitative evaluation*' and '*Product selection*' between the conceptual model and the practical-use model and said that the explanation in the practical-use model was more understandable. Five experts did not want to change explanations of quantitative evaluation and product selection in the practical-use model and determined these activities as the ones for the suggested model without change (see Appendix A-II and A-III).

Assortment Sale Plan

As mentioned above, five experts determined '*Plan sales of assortment*' as the functional name of the final stage for the suggested assortment-planning model. Three experts suggested that assortment sales plan should be categorized into three operational activities: style sales plan, color sales plan, and size sales plan, as in the conceptual model. The experts explained that the three operational activities might be subconscious mechanisms for assortment sales planning and could not be mentioned by interviewees through interview process. The two other experts were satisfied with the practical-use model. After discussing this discrepancy, the five experts decided to categorize the mechanisms into three operational activities: planning style sales (A61), planning color sales (A62), and planning size sales (A63). From the mechanisms of '*Determining order quantity*' in the practical-use model, six of nine mechanisms were considered as the mechanisms of style sales plan, and three were selected as the mechanisms of color and

size sales plan (see Appendix A-III). Inputs, constraints, and outputs for planning style sales, planning color sales, and planning size sales are described in Figure 9-86, Figure 9-87, and Figure 9-88.

Validation of Suggested Model

In general, the five experts confirmed the practical-use model but made some adjustments in terminology and groupings. Most mechanisms, inputs, constraints, and outputs were retained from the practical-use model. To ensure that these changes did not affect the applicability of the practical-use model, the ten interviewees were asked to validate the final suggested model.

Problem Recognition

Regarding vendor performance analysis, 86% of respondents validated the activity, and 14% of respondents suggested changing to information search. All respondents answered that the product performance analysis belonged in their problem recognition process. More than one-half of respondents (57%) validated customer needs realization as one of the functional activities for problem recognition. Three interviewees suggested that customer needs realization could be done in another stage, for example, in the information search or the first stage of the whole clothing buying process. Most respondents (86%) validated defining problem and direction for new assortment, and one respondent answered that the activity was done in another stage. Based on majority rule, interviewees accepted all four functional activities under problem recognition in the suggested model.

Information Search

For style information search, all respondents validated five functional activities among the twelve activities. The five activities were as follows: (a) identifying customer life style and fashion-ability, (b) watching better market trends; (c) analyzing sales data by style; (d) gathering opinions, and (e) pinpoint repeated styles. 71% of respondents obtained a forecasting report, and 29% of respondents did not have the forecasting report. Most respondents (86%) identified common new styles from vendors' collections for style information search, and 14% of respondents did the activity in another stage. Regarding customer request categorization and competitor's product observation, 71% of respondents validated the activity, and 29% of respondents did not validate the activity. A majority of respondents (57%) validated summarization activity as a style information search activity. Based on majority rule, all functional activities for style information search except observing street trend were validated by

respondents. Non-validated activities for the suggested model are indicated in IDEF0 diagrams (see Figure 9-11 and Figure 9-21).

Eight of twelve activities under color information search were validated by all respondents (see Appendix D-II). Related to observing street color trend, only 43% of respondents validated the activity. Observing street trend, therefore, was not validated for the final model or indicated in IDEF0 diagrams. Regarding a report from color forecasting service and categorizing customer request, 86% of respondents validated the activities, and 14% of respondents did not validate the activities.

All respondents validated five of seven size search activities. Regarding the comparison of size variation regarding product characteristics, 71% of respondents had the activity for size information search. The majority of respondents (57%) considered the necessity of a new size range through size information search (see Appendix D-II). All activities in the size information search were validated by majority rule.

Qualitative Evaluation

All respondents validated three of four activities for style qualitative evaluation: defining product concept, predicting the product sales ability, and gathering opinion. The fourth activity for style qualitative evaluation, summarization of evaluation results, was validated by 57% of respondents. Based on majority rule, all four activities for style qualitative evaluation were confirmed. One interviewee who participated in the validation survey confirmed the usage of Style-Out: "I did use Style-out consistently, both informally and sometimes formally with larger groups of people."

All respondents validated three of five activities for color qualitative evaluation: identifying color palette, considering color match with style, and gathering opinion (see Appendix D-II). A majority of respondents (71%) considered if vendors offered the colors in palettes, and 29% of respondents did not. As with information search and style qualitative evaluation, only 57% of respondents organized evaluation results, and 43% of respondents did not validate their qualitative evaluation.

All respondents defined the size range of target customers and identified a size range that sold well in the past. Eighty-six percentage of respondents considered new size range possibility, and only 14% of respondents did not consider this activity. Only 57% of respondents watched fit of samples or actual products for size evaluation, and the remaining 43% did not validate this

activity for size evaluation. Seventy-one percentage of respondents answered that they would organize size evaluation results.

Quantitative Evaluation

For style quantitative evaluation, all interviewees validated six of eight activities (see Appendix D-II). 71% of respondents validated the two remaining activities, considering the financial agreement and organizing evaluation results. Based on majority rule, all activities in style quantitative evaluation were confirmed.

For color quantitative evaluation, 57% of respondents answered that they validated deciding open-to-buy dollars for each style, and 43% of respondents did complete this activity in another stage. Most respondents (86%) validated the other six activities: analyze percentage of basic colors, tested colors, and new colors; predict percentage of each color; consider the financial agreement; and organize evaluation results. The validity of all activities for color quantitative evaluation was confirmed by majority rule.

For size qualitative evaluation, all interviewees validated the three activities: analyzing percentage of past size, considering financial agreement, and organizing evaluation results. All interviewees organized evaluation results after completing all evaluation processes. Most respondents (86%) validated two activities: analyzing percentage of tested size or new size and considering style fit for size evaluation. Only 57% of respondents decided open-to-buy dollars for size, 29% of respondents did not, and 14% of respondents completed this activity in another stage in the assortment planning process. All activities related to size quantitative evaluation were confirmed by respondents.

Product Selection Plan

All interviewees confirmed that they used all style selection activities. Among the activities for color selection, only two activities, spreading numbers of colors selecting for each style and determining order quantity, were accepted by all interviewees. Regarding rechecking color palettes and having style selection, 71% of confirmed the activities, and 29% of respondents did not. Related to ranking priority colors, 14% of respondents did the activity in another stage of assortment planning process, and 71% of respondents confirmed the activity. All interviewees validated all size selection activities except balancing with vendor's size offer. The activity, balancing with vendor's size offer, was confirmed by 71% of respondents. The validity of the activities under product selection was confirmed by respondents based on a majority rule.

Assortment Sales Plan

All interviewees validated the following six activities under product sales plan: spreading quantitative evaluation results across product selection, considering retail price, considering external forces, balancing with open-to-buy dollars, and considering delivery schedule. Most respondents (86%) validated the activity, considering financial agreement with vendors; However, 14% of respondents did not. All interviewees validated styles sales plan, but only 71% of respondents validated the color sales plan and size sales plan. Few respondents (14%) did not take part in the final color and size sales plan, and 14% of respondents conducted the activity in another stage. The validity of activities for sales plan was confirmed.

Interviewees accepted the activities of the suggested model as their activities of assortment planning. Interviewees participating in the validation survey validated all four functional activities under problem recognition. Interviewees also accepted the functional activities in the suggested model as their search activities of style and color information with the exception of observing street trends. All activities in size information search were validated by majority rule. The functional activities for qualitative evaluation and quantitative evaluation were validated by a majority rule. The functional activities of product selection were validated based on majority rule, and the functional activities of sales plan were also validated.