The Impact of Personality Variables, Prior Experience, and Training on Sales Agents’ Internet Utilization and Performance

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ABSTRACT. Emerging literature on the impact of the Internet on business-to-business (B2B) marketing has primarily focused on examining this issue from the perspective of manufacturers and buyers. This study focuses on the sales agent, a third prominent actor in B2B markets, and tests a conceptual model that relates a sales agent’s personality, demographic, and user-situational constructs to that sales agent’s Internet utilization for selling activities. Further, the model tested in this study relates a sales agent’s Internet utilization to perceived sales performance. Findings in this study indicate that internal locus of control, learning orientation, and sales related Internet training relate positively to a sales agent’s Internet utilization, and that a sales agent’s age relates negatively to Internet utilization. Further, the results support a positive relationship between a sales agent’s Internet utilization and sales performance. This study emphasizes that the Internet can be a productive tool for sales agents.
The implications of the results of this study for sales agents with respect to training and recruitment are discussed and avenues for future research are suggested. [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <http://www.HaworthPress.com> © 2004 by The Haworth Press, Inc. All rights reserved.]

**KEYWORDS.** Internet utilization, locus of control, learning orientation, experience, training, performance, sales agents

**INTRODUCTION**

The Internet is a unique communication medium (Hoffman & Novak, 1996) that facilitates storage and exchange of information available interactively at a marginal cost (Peterson et al., 1997). Not surprisingly, the Internet has found extensive application in both consumer and business markets. The increase in the use of Internet resources in business-to-business (B2B) markets has truly been spectacular. Estimates regarding Internet B2B sales in 2004, for example, range from $2.7 trillion (Blackmon, 2000) to $7.3 trillion (Shaw, 2001). Realization of the importance of the Internet in business-to-business marketing has resulted in increased efforts on the part of researchers to better understand its impact. Studies have initiated investigations regarding this issue from the perspective of suppliers (e.g., Avlonitis & Karayanni, 2000; Deeter-Schmelz et al., 2001), buyers (e.g., Kennedy & Deeter-Schmelz, 2001), and relationships between suppliers and buyers (e.g., Ling & Yen, 2001). Topics that have been studied include trends in B2B marketing (Sharma, 2002), strategic utilization of the Internet by firms (Sadowski et al., 2002), issues a firm should consider before developing a web business (Wilson & Abel, 2002), evaluation of B2B web-sites (Leong & Ewing, 2002), and management of channels of distribution (Webb, 2002).

As is evident from the literature cited above, extant research in business-to-business marketing has largely focused on the role the Internet plays as an innovative marketing channel that provides a direct link between suppliers and buyers. Direct (proprietary) sales forces and independent intermediaries such as sales agents represent the other marketing channels that suppliers in business markets utilize to sell their products and services. Notwithstanding the trend where an
increasing number of suppliers are opting to sell over the Internet, the
two alternative channels represent valuable links in business markets.
However, scholars have paid scant attention to the impact the Internet
may have either on the solvency or on the operations of direct sales
forces or independent marketing intermediaries such as sales agents.
This study addresses one of these gaps in current business-to-business
marketing literature by examining one possible influence the Internet
has on sales agents’ operations.

More than half a million independent intermediaries comprising
manufacturer representative, broker or agent firms operate as distribu-
tion channels in North America today (source: Manufacturer Represen-
tatives Educational Research Foundation, 2002). The presence of these
intermediaries such as sales agents in business markets offers suppliers
with a viable and sometimes more profitable alternative to employing
and compensating a direct (proprietary) sales force (cf. Anderson &
Weitz, 1992; Weiss & Anderson, 1992). Such intermediaries are, there-
fore, an important population from the perspective of both researchers
and principals in business markets.

The relatively meager literature addressing the impact of the Internet
on independent intermediaries include some conceptualizations (e.g.,
Learner & Storper, 2001; Stead & Gilbert, 2001) and empirical studies
(e.g., Gulati, Bristow, & Dou, in press) that focus on Internet mediated
disintermediation of independent sales agents. Some relevant issues
that researchers have yet to address include examining (a) factors that
influence the adoption and utilization of Internet resources by interme-
diaries such as independent sales agents in business markets, and (b) the
consequences to these intermediaries of such adoption and utilization.
This study addresses the above research gap in the business-to-business
marketing literature by investigating the influence of one plausible set
of individual and situational determinants on, and one possible conse-
quence of, an independent agent’s use of Internet resources.

Utilizing the emerging literature addressing the impact of the Internet
on marketing, findings from information systems research, interviews
with sales agents, and related theories, this study first conceptualizes
and then empirically tests a model that seeks to answer the following re-
search questions:

1. What relationships, if any, exist between an independent sales
agent’s (a) internal locus of control orientation, (b) learning orienta-
tion, (c) age, (d) sales related Internet training, and (d) non-sales
related Internet use and the extent to which the sales agent utilizes the Internet for selling activities?

2. What is the relationship, if any, between an independent sales agent’s utilization of the Internet for selling activities and the consequent performance the agent attributes to such Internet utilization?

The above research questions, therefore, identify certain plausible determinants of a sales agent’s Internet utilization. The rationale behind selecting these specific determinants is as follows. A review of literatures addressing factors that influenced (a) attitudes toward technology as well as technology adoption and use (e.g., Agarwal & Prasad, 1999; Alavi & Joachimsthaler, 1992; Harrison & Rainer, 1992; Howell & Shea, 2001; Igbaria, Guimaraes, & Gordon, 1995; Morris & Venkatesh, 2000; Taylor & Todd, 1995; Thompson, Higgins, & Howell, 1994), and (b) learning (e.g., Colquitt & Simmering, 1998; Lang & Wittig-Berman, 2000; Sujan et al., 1994) indicated that plausible variables influencing Internet use could be classified into three categories—personality traits, demographic variables, and user-situational variables. This review also identified two personality traits, i.e., learning orientation and locus of control (e.g., Colquitt & Simmering, 1998; Lang & Wittig-Berman, 2000; Lengnick-Hall & Sanders, 1997; Sujan et al., 1994), one demographic variable, age (e.g., Kerr & Hiltz, 1988; Morris & Venkatesh, 2000) and two-user situational variables, experience and training (e.g., Agarwal & Prasad, 1999; Alavi & Joachimsthaler, 1992; Igbaria, Guimaraes, & Davis, 1995; Igbaria, Pavri, & Huff, 1989) as prominent variables that may influence adoption and use of technology such as the Internet. This study, therefore, incorporated all three categories of variables and selected the above stated specific variables within each category to reflect the emphasis placed on them in previous studies.

We recognize the possibility that other variables, not addressed by this study, may also influence an intermediary’s Internet utilization. We also acknowledge the existence of powerful theoretical frameworks that have guided research on adoption and utilization of information technology, including the theories addressing the adoption and diffusion of innovation (e.g., Rogers, 1995), the theory of reasoned action (Ajzen & Fishbein, 1980), the theory of planned behavior (Ajzen & Madden, 1986), and the technology acceptance model (Davis, 1989). However, the purpose of this paper does not involve testing any one or more of these theoretical frameworks in the context of a sales agent’s Internet utilization. Rather, this study utilizes related findings and focuses on...
identifying and testing for direct relationships (a) between selected variables and an intermediary’s Internet utilization, and (b) the impact such utilization has on the intermediary’s performance as implied by the research questions.

The next section introduces the conceptual model that relates a sales agent’s personality characteristics, experience, and training to that sales agent’s extent of Internet utilization and consequent performance (abbreviated as the Sales Agent’s IUP model). The constructs the model includes are defined and the hypothesized relationships the model implies are developed. Subsequently, descriptions of the procedures involved in developing the survey instrument, collecting the data, and analyzing the procured data are presented. The findings of this study are then presented. This is followed by a discussion of the implications that flow from the results of the study. The final section lists some limitations of this study and suggests avenues for related future research.

CONCEPTUAL FRAMEWORK AND HYPOTHESES

The Sales Agent’s Internet Utilization and Performance model (i.e., the Sales Agent’s IUP model, Figure 1) forwards several constructs that influence directly the extent to which a sales agent utilizes the Internet for selling activities. As Figure 1 depicts, a sales agent’s internal locus of control orientation and learning orientation are two personality traits that relate positively to that sales agent’s Internet utilization. A demographic variable, i.e., a sales agent’s age, is depicted in the IUP model as influencing a sales agent’s Internet utilization negatively. Further, the model depicts that two user-situational variables, i.e., a sales agent’s prior non-sales related Internet use and sales related Internet training influence positively the sales agent’s use of the Internet for selling activities. Finally, the Sales Agent’s IUP model depicts that a sales agent’s Internet utilization is directly and positively related to that agent’s perception regarding the impact such utilization has on performance.

Internet Utilization: Both business literature and academic journals emphasize that the Internet is an innovative medium that facilitates better communication between individuals or firms (e.g., Dos Santos & Kuzmitz, 2000; Hoffman & Novak, 1996; Pease, 2000; Peterson et al., 1997). In describing how the Internet can be utilized by salespersons, Weitz et al. (2001) state that the Internet aids salespersons in several selling activities such as prospecting, information gathering, and communicating with principals and customers. In the context of sales
agents, Gulati, Bristow, and Dou (in press) define Internet utilization as the extent to which independent sales agents use the Internet to establish and maintain communication linkages with their principals, prospects, and current customers. This study adapts this definition of Internet utilization. For the purpose of this study, Internet utilization refers to the extent the Internet is used for performing selling activities such as prospecting and providing service to customers.

Learning Orientation and Internet Utilization: An individual’s learning orientation is an intrinsic personality trait that motivates the individual to learn in order to improve his or her abilities and become more competent at performing relevant tasks (Dweck & Legget, 1988; Lang & Wittig-Berman, 2000; Sujan et al., 1994). Prior research has related learning orientation positively to (a) an individual’s belief that abilities can be acquired (Elliot & Dweck, 1988), (b) a student’s functioning and learning (Lengnick-Hall & Sanders, 1997), (c) a salesperson’s ability to develop and apply selling knowledge and also to work hard at his or her job (Sujan et al., 1994), and (d) an individual’s motivation to learn (Colquitt & Simmering, 1998).

The above findings suggest that an individual with a high learning orientation is able to adapt and master new environments and situations
with relative ease. We now apply these findings to an independent sales agent’s utilization of the Internet. A sales agent who possesses a high learning orientation, in comparison to another sales agent who does not have the same degree of learning orientation, should be more willing and able to expend effort in learning to utilize Internet resources for business purposes. This sales agent should also utilize the Internet, a relatively new communication tool, to a greater extent in communicating with customers. The Sales Agent’s IUP model (see Figure 1) depicts this relationship through a direct arrow leading from the construct learning orientation to Internet utilization.

H1: The higher is an independent sales agent’s learning orientation, the greater is the sales agent’s Internet utilization for selling activities.

Locus of Control and Internet Utilization: Rotter (1966) defines locus of control as a personality trait that determines the extent to which an individual believes that his or her behavior directly influences the events that follow. Individuals with an internal locus of control, for example, believe that (a) they have direct influence over the events in their lives, and (b) outcomes are related to their efforts (Lefcourt, 1991). Individuals with external locus of control, on the other hand, believe that events in their lives are caused by forces not within their control. According to Rotter (1966), internal locus of control is a personality trait that positively influences learning and is capable of influencing behavior in many situations.

Previous research findings that have looked at the relationships between locus of control and organizational behavior have linked internal locus of control positively to an individual’s desire for autonomy, ability to process complex tasks, and responsibility (Abdel-Halim, 1980; Spector, 1982, 1986). Research also suggests that individuals with internal locus of control orientation set higher goals for themselves (Hollenbeck & Klein, 1987; Phillips & Gully, 1997), are more likely to engage in managing issues themselves (Spector, 1982, 1986), are better suited to jobs that require initiative and problem solving capabilities (Abdel-Halim, 1980), and are more likely to view innovations as opportunities (Howell & Shea, 2001).

The above findings can be usefully applied in postulating a relationship between internal locus of control orientation of independent sales agents and their Internet utilization. Sales agents with an internal locus of control are likely to view the availability of Internet resources as an
opportunity, are likely to take the initiative in adopting and utilizing the Internet, and are likely to be able to utilize the Internet resources in a constructive manner. This posited relationship is depicted in Figure 1 by a direct arrow linking locus of control and Internet utilization.

H2: For an independent sales agent, an internal locus of control orientation relates positively to that sales agent’s Internet utilization for selling activities.

Age and Internet utilization: Prior research addressing the impact of age on acceptance and use of new technology largely supports a negative relationship between age and the other variables (e.g., Kerr & Hiltz, 1988; Morris & Venkatesh, 2000). For instance, Morris and Venkatesh (2000) found that an employee’s age was negatively related to both short term and long term utilization of a new software. In a related study, Harrison and Rainer (1992) found that younger individuals were more skilled at using computers. Elsewhere, employee age has been linked to a resistance to change in the work environment and an inclination for familiar tasks (Myers & Conner, 1992; Sharit & Czaja, 1994). However, some studies have failed to find a significant relationship between age and technology acceptance and use. For example, Zinkhan, Joachimsthaler, and Kinnear (1987) did not find a significant relationship between age and the use of a marketing decision support system. Agarwal and Prasad (1999) failed to find a negative relationship between an employee’s length of tenure and the employee’s beliefs about the usefulness and ease of use of an information technology innovation.

For an independent sales agent, the Internet represents a new technology and the utilization of Internet resources for selling purposes presents a departure from the customary way of doing business. Hence, the findings in literature with regard to the relationship between age and new technology adoption and use should apply to the sales agent also. In accordance with the bulk of research that suggests a negative relationship, the Sales Agent’s IUP model depicts a negative relationship between a sales agent’s age and his/her Internet utilization.

H3: A sales agent’s age relates directly and negatively to that sales agent’s Internet utilization for selling purposes.

Training and Internet Utilization: As training provides relevant information about various facets of a new technology, it helps in reducing uncertainty and anxiety about that innovation (Agarwal & Prasad,
Reduced uncertainty and increased knowledge facilitates acceptance and use of new technologies. Agarwal and Prasad (1999) found that an individual’s training on an information technology innovation was related positively to that individual’s beliefs regarding usefulness and ease of use of that technology. Other findings in information systems literature strongly suggest a positive and direct relationship between computer training and subsequent use (Igbaria, Guimaraes, & Davis, 1995; Igbaria, Pavri, & Huff, 1989). In a similar vein, a meta-analysis conducted by Alavi and Joachimsthaler (1992) found strong support in literature for a positive relationship between training and successful decision support system implementation including its utilization.

Applied to an independent sales agent, these findings suggest that a sales agent who receives training in utilizing the Internet for business purposes would have more information about such use, will have less uncertainty and anxiety with respect to utilizing the Internet resources available, and should utilize the Internet more fully in selling activities. The Sales Agent IUP model indicates this relationship through a direct and positive path between training and Internet utilization.

H4: Sales related Internet training is related directly and positively to a sales agent’s Internet utilization for selling activities.

Experience and Internet Utilization: The relationship between prior experience and behavior is well established in social psychology literature (e.g., Ajzen & Fishbein, 1980; Bagozzi, 1981; Fishbein & Ajzen, 1975). Findings in information systems literature have linked prior experience with computers positively to subsequent computer usage (Igbaria, Guimaraes, & Davis, 1995; Igbaria, Pavri, & Huff, 1989), and computer skills (Harrison & Rainer, 1992). Alavi and Joachimsthaler (1992), in their meta-analytic study, found support for a positive relationship between prior experience in using decision support systems (DSS) and subsequent successful DSS implementation. Agarwal and Prasad (1999) hypothesized and established that an individual’s prior experience with similar technologies was related positively with that individual’s beliefs about the usefulness and ease of use of an information technology innovation.

We argue that a similar relationship exists between an independent sales agent’s prior use of Internet resources for non-selling activities and that sales agent’s subsequent use of the Internet for selling purposes. A sales agent’s prior exposure to the Internet is likely to lead to
more favorable intentions and stronger beliefs about the utility of the Internet for business purposes. Such intentions and beliefs are likely to result in greater Internet utilization on the part of the sales agent in selling activities. The Sales Agent’s IUP model, accordingly, depicts a positive and direct relationship between non-sales related Internet use and Internet utilization for selling activities.

H5: The greater is an independent sales agents prior non-sales experience with the Internet, the greater is that sales agent’s Internet utilization for selling activities.

*Internet Utilization and Performance:* In business-to-business markets, buyer and seller firms that transact online are benefitting from increased efficiencies and effectiveness because of cost savings and improved productivity (Deeter-Schmelz et al., 2001; Sharma, 2002). The characteristics of the Internet such as interactivity, unlimited information storage capacity, low cost, and speed of information transfer (Peterson et al., 1997) that provide these firms with such advantages should also assist intermediaries in conducting their business. Gulati, Bristow and Dou (in press), for example, concluded from their study that sales agents who utilized the Internet for business purposes achieved better information exchange with their principals. We postulate that sales agents who utilize the Internet to prospect, communicate with and provide service to their customers will be able to perform these activities more effectively. The Sales Agent’s IUP model indicates this relationship by a direct path relating Internet utilization and performance.

H6: An independent sales agent’s Internet utilization for selling activities is directly and positively related to sales performance.

**METHOD**

Data for this study was collected through a survey of independent sales agents who belong to a national manufacturer’s agents association. The survey instrument gathered information pertaining to sales agents’ personality, age, and user-situational variables in addition to tapping their perceptions regarding Internet use and consequent performance.
Participants: The survey participants were independent sales agents who were randomly selected from the membership roster of a national manufacturer’s agents association. Out of a total of 1,500 surveys distributed, 335 useable surveys were returned, resulting in a response rate of approximately 22 percent. An evaluation of early and late respondents revealed no response bias (see Armstrong & Overton, 1979). The average age of participating sales agents was 51 years, and approximately 77% had completed a college education. These sales agents had, on average approximately 19 years of experience and employed 4 salespeople. The average annual sales achieved by the participants was $9.4 million.

Development of Survey Instrument and Testing: The process adopted for developing the survey instrument included in-depth discussions with the representatives from the national manufacturer’s association in order to better understand the operations of member sales agents and comprehend their Internet use. Additionally, marketing academicians were consulted to obtain their inputs regarding the issues of interest to the researchers. In order to obtain the item-sets that represented the constructs of interest, the researchers consulted various available construct scales and reviewed the literatures in marketing, social psychology, and information systems. Construct measures that exhibited desirable reliability and validity were adapted to suit the current investigation. Where such scales could not be identified from the literature, the nomological nets for constructs were developed by tapping into the expertise and experience of manufacturer’s association representatives and through consultation with academicians. These procedures led to the selection of the item-sets that represented the constructs in the Sales Agent’s IUP model.

A sales agent’s learning orientation was represented by a 6-item set adapted from a scale developed by Sujan, Weitz, and Kumar (1994) (Cronbach Alpha = .81). For example, the Learning Orientation Scale item “An important part of being a good salesperson is continually improving your sales skills,” was adapted in this study as “I continually work to improve my selling skills.” Similarly, the LOS item, “It is important for me to learn from each selling experience” was adapted as “I learn something from each selling experience” in this study. A 4-item set, adapted from scales developed by Rotter (1966), MacDonald and Tseng (1971), and Spector (1988) (Cronbach Alpha = .82 to .87 across several studies) was used in this study to measure a sales agent’s internal locus of control orientation. For instance, the following internal locus of control scale items, “It isn’t wise to plan too far ahead because
most things turn out to be a matter of good or bad fortune anyhow” and “Many times I feel that I have little influence over things that happen to me,” were adapted as “I can pretty much determine what happens in my life”, and “My life is determined by my own action,” respectively. An agent’s sales related Internet training was represented by a 3-item set, and a 4-item set was generated in order to assess a sales agent’s prior non-sales related Internet experience.

The 6-item Internet Utilization scale developed by Gulati, Bristow, and Dou (in press) was adapted to this study by eliminating one item (my firm uses the Internet to communicate with our principals) that was deemed inappropriate for the sample used in this study. An 8-item set was identified as being representative of a sales agent’s Internet related performance perceptions. Interviews with representatives of the national manufacturer’s agents association revealed that sales agents made all strategic, operational, and tactical decisions pertaining to their business operations, and correspondingly, equated their work related activities to those of the firms they owned. Accordingly, statements that measured a sales agent’s (a) Internet utilization, and (b) performance perceptions were worded to reflect the centralized nature of a sales agent’s operations (see Table 1). The chronological age of the participating sales agents served as an objective measure of the final construct depicted in Figure 1.

The 7 constructs depicted in the Sales Agent’s IUP model, therefore, were initially represented in the survey instrument by thirty-one items (see Table 1). All the survey items were written into a 7-point Likert type format and were reviewed by marketing academicians with expertise in the areas of professional selling, e-commerce/Internet marketing, consumer behavior, and marketing research. The reviewers examined the survey items for potential problems in wording, phrasing, understandability, or redundancy. This review process resulted in the revision of several items. The revised items and 8 demographic questions were subsequently reviewed by several manufacturers’ representatives. This procedure revealed no problems with the wording or understanding of the various item-sets.

Survey Administration: In order to maximize response rate, the researchers sought the assistance of the president and director of the membership of the national manufacturer’s agents association. With the cooperation of these individuals, a letter explaining the nature of the research and indicating the association’s support of the study was drafted. This letter served as the cover page of the survey instrument. Additionally, this letter was also included in an issue of the association’s
### TABLE 1. Summary of Findings for the Respecified Measurement Model

| Constructs and Items | Cronbach's Alpha | Sq. Multiple R | Std. Loadings | t-Value | p <  
|----------------------|------------------|----------------|---------------|---------|-------
| **Learning Orientation** |                 |                |               |         |       
| I continually work to improve my selling skills | ∞                | 0.54           | 0.74          | 14.51   | .001  
| I continually work to improve my product knowledge | 0.826            | 0.51           | 0.71          | 13.91   | .001  
| I learn something from each selling experience | 0.40             | 0.63           | 11.87         | .001    |       
| I am always learning something new about my customers | 0.47             | 0.69           | 13.27         | .001    |       
| Learning how to be a better manufacturer's rep is of fundamental importance to me | 0.54             | 0.73           | 14.44         | .001    |       
| There are few new things to learn about selling* | 0.54             | 0.73           | 14.44         | .001    |       
| **Internal Locus of Control** |                 |                |               |         |       
| I am almost certain to make my plans work | ∞                | 0.37           | 0.60          | 11.17   | .001  
| I can pretty much determine what happens in my life | 0.803            | 0.55           | 0.74          | 14.39   | .001  
| When I get what I want, it’s usually because I worked hard for it | 0.59             | 0.77           | 15.13         | .001    |       
| My life is determined by my own actions | 0.55             | 0.74           | 14.40         | .001    |       
| **Internet Utilization** |                 |                |               |         |       
| My firm uses the Internet to find information about our customers | ∞                | 0.85           | 0.92          | 20.96   | .001  
| My firm uses the Internet to find information about prospects | 0.840            | 0.81           | 0.90          | 20.25   | .001  
| My firm uses the Internet to communicate with prospects | 0.40             | 0.63           | 12.45         | .001    |       
| The Internet is a tool that my firm uses to communicate with our customers* | 0.40             | 0.63           | 12.45         | .001    |       
| My firm uses the Internet to provide follow-up service to our customers* | 0.40             | 0.63           | 12.45         | .001    |       
| **Sales Related Internet Training** |                 |                |               |         |       
| I have had formal training in the use of e-mail as a form of communication in selling | ∞                | 0.79           | 0.89          | 20.13   | .001  
| I have had formal training in the use of the World Wide Web to find information relevant to selling | 0.911            | 0.92           | 0.96          | 22.92   | .001  
| I have had formal training in using the Internet to transfer documents | 0.64             | 0.80           | 17.34         | .001    |       

*Denotes items with asterisks.
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<tr>
<th>Constructs and Items</th>
<th>Cronbach’s Alpha</th>
<th>Sq. Multiple R</th>
<th>Std. Loadings</th>
<th>t-Value</th>
<th>p &lt;</th>
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<tbody>
<tr>
<td>Prior Internet Experience</td>
<td></td>
<td></td>
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<tr>
<td>In the past, I have used the Internet to participate in chat rooms</td>
<td>≈</td>
<td>0.21</td>
<td>0.46</td>
<td>7.01</td>
<td>.001</td>
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<tr>
<td>In the past, I have used the Internet for on-line entertainment (i.e., games, audio, video)</td>
<td>0.550</td>
<td>0.26</td>
<td>0.51</td>
<td>7.75</td>
<td>.001</td>
</tr>
<tr>
<td>In the past, I have used the Internet to help me make purchase decisions</td>
<td></td>
<td>0.41</td>
<td>0.64</td>
<td>9.40</td>
<td>.001</td>
</tr>
<tr>
<td>In the past, I have used the Internet as a communication tool*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Perceived Performance</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Using the Internet has resulted in an increase in sales for my firm</td>
<td>≈</td>
<td>0.57</td>
<td>0.76</td>
<td>16.07</td>
<td>.001</td>
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<tr>
<td>Using the Internet has enabled my firm to provide better service to our customers</td>
<td>0.916</td>
<td>0.78</td>
<td>0.88</td>
<td>20.29</td>
<td>.001</td>
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<tr>
<td>Using the Internet has made my firm more effective</td>
<td></td>
<td>0.90</td>
<td>0.95</td>
<td>23.08</td>
<td>.001</td>
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<tr>
<td>Using the Internet has enabled my firm to reduce our selling costs</td>
<td></td>
<td>0.42</td>
<td>0.65</td>
<td>12.99</td>
<td>.001</td>
</tr>
<tr>
<td>Using the Internet has increased the efficiency of my firm</td>
<td></td>
<td>0.77</td>
<td>0.88</td>
<td>20.13</td>
<td>.001</td>
</tr>
<tr>
<td>On average, using the Internet has reduced the amount of time required for my firm to make a sale</td>
<td></td>
<td>0.44</td>
<td>0.66</td>
<td>13.43</td>
<td>.001</td>
</tr>
<tr>
<td>Using the Internet has enabled my firm to do a better job of prospecting*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Using the Internet has enabled my firm to locate prospects more quickly*</td>
<td></td>
<td></td>
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</tbody>
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*Denotes items that were removed from the analyses during scale purification.

Descriptive Goodness of Fit Indices:

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<tr>
<td>$x^2$ (N = 335), p = .00</td>
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<td>RMR</td>
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<tr>
<td>GFI</td>
<td>0.87</td>
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<td>AGFI</td>
<td>0.84</td>
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<tr>
<td>CFI</td>
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<td>AIC</td>
<td>719.68</td>
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<td>RMSEA</td>
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</table>
monthly agency sales magazine which was sent to all association members approximately 2 weeks prior to the distribution of the survey instrument. The agency administrators also e-mailed the member sales agents, giving them an advance of the questionnaire they might receive via the U.S. mail.

The survey instrument was mailed out (first class via the United States Post Office) to the 1,500 randomly selected sales agents three days after the e-mail message was distributed. A week and a half later, the selected sales agents received another e-mail from the director of membership of the manufacturers’ agents thanking them for their participation and requesting them to complete the survey if they had not already done so. This e-mail message also included contact information so that sales agents could request a second copy of the survey instrument if they had not yet received it.

**MEASURE PURIFICATION AND ANALYSIS**

A correlation matrix of the thirty items representing the 7 constructs depicted by the Sales Agent’s IUP model (Figure 1) was generated after validating the data-set (i.e., ascertaining the correctness of the responses, reverse coding, etc.). An examination of the inter-item correlations was undertaken to assess (a) the pattern of correlations between items representing unique constructs, and (b) the pattern of correlations between items representing distinct constructs. The procedure listed by Gerbing and Anderson (1988) was used to assess the dimensionality of the 6 constructs in the Sales Agent’s IUP model measured by multi-item scales. These items, therefore, were subjected to principal component analysis using the Kaiser criterion (eigenvalue ≥ 1) with varimax rotation.

The resulting 8-factor structure was examined to assess the loadings and cross-loadings of the 30 items. Six items either (a) cross-loaded on more than one factor (loadings > .4), and/or (b) loaded on a factor that could not be identified. Further, these items exhibited low loadings (loading < .5) on the factor (construct) they represented. A re-examination of the correlation matrix indicated that these 6 items had statistically significant correlations with items representing other constructs but weak correlations with items representing the same constructs. After examining the content of these items, it was determined that the understandability of each of these items may be suspect, and that each was a poor representative of the associated construct. Consequently,
these 6 items were deleted from further analysis. A second principal component analysis with the twenty-four remaining items yielded a 6-factor structure with eigenvalues > 1 (total variance explained = 69%). The loadings of the twenty-four items corresponded to the constructs they represented, suggesting that all the construct measures were unidimensional.

To purify and further assess the unidimensionality of the construct-measures, a confirmatory factor analysis was conducted using LISREL 8.3 (see Anderson & Gerbing, 1988; Gerbing & Anderson, 1988). Table 1 summarizes the findings of the measurement model in which 24 items were hypothesized to represent 6 constructs in the Sales Agent’s IUP model (Figure 1). For the measurement model analyzed, the following values were observed for the various fit indices: X^2 (237 N = 335) = 595.91; p = .00; Standardized RMR = .06; GFI = .87; AGFI = .84; NFI = .87; NNFI = .90; CFI = .92; and RMSEA = .067. The model, therefore, exhibited acceptable values for a majority of fit indices (see Bentler & Bonnet, 1980; Williams & Hollahan, 1994). Additionally, all but one standardized loading exceeded .50, and the squared multiple correlations were adequate suggesting an acceptable model fit. The statistically significant standardized loadings exhibited by the twenty-four items representing the six constructs (see Table 1) established the convergent validity of the measures (see Anderson & Gerbing, 1988).

Chi-square difference tests were conducted to determine the discriminant validity of the 6 multi-item constructs in the Sales Agent’s IUP model. Table 2 presents the results of these tests. The X^2 differences between all possible pairs of constructs are statistically significant (Overall α = .05; critical α = .0034137; critical X^2 (1 d.f.; p = .001) = 10.828), implying that the item-sets representing the various constructs exhibit discriminant validity (see Anderson & Gerbing, 1988; Bagozzi & Phillips, 1982). Table 1 and Table 2 together indicate that the 6 multi-item measures possess both convergent and discriminant validity, i.e., the measures exhibit construct validity (Kerlinger, 1986).

Table 1 also depicts (a) the purified item sets that represent the 6 unidimensional constructs in the Sales Agent’s IUP model, and (b) the reliability of those item-sets. Five of the six measures exhibit good consistency (Cronbach α). The item-set representing a sales agent’s non-sales related Internet experience had an unacceptably low reliability (cf. Nunnally, 1978). This construct was deleted from the subsequent path analysis undertaken to test the relationships hypothesized in the IUP model. The relationship expressed in Hypothesis 5, therefore, could not
be formally tested. Table 3 reports the correlation matrix for the construct-measures computed by summatting the item-sets representing the 6 constructs and the single item objective measure of a sales agent’s age.

This study followed the two-step structural equation modeling procedure advocated by Anderson and Gerbing (1988). After purifying the measures as described above, a covariance matrix of the 5 summated construct measures and one single item measure (age) was generated. The linear relationships posited by the Sales Agent’s IUP model were tested using a path-analytic technique in LISREL 8.3. The following values were observed for the various fit indices: \( \chi^2 (4, N = 335) = 7.76, p = .10; \) Standardized RMR = .024; GFI = .99; AGFI = .96; NFI = .98; CFI = .99; and RMSEA = .052. Based on the Chi-square value, and the values of various fit indices, the path model indicated a good fit for the tested model.

Table 4 reports the standardized path coefficients along with their t-values and statistical significance for the various hypothesized linear relationships. Figure 2 depicts the various paths that were tested along
### TABLE 3. Correlation Matrix of Constructs Included in the Sales Agent's IUP Model

<table>
<thead>
<tr>
<th>Construct</th>
<th>Learning Orientation</th>
<th>Internal Locus of Control</th>
<th>Age</th>
<th>Sales Related Internet Training</th>
<th>Prior Internet Experience</th>
<th>Internet Utilization</th>
<th>Perceived Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Orientation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Locus of Control</td>
<td>.456**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.048</td>
<td>.024</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Related Internet Training</td>
<td>.094</td>
<td>.017</td>
<td>.002</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior Internet Experience</td>
<td>−.112*</td>
<td>−.094</td>
<td>−.292**</td>
<td>.208**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet Utilization</td>
<td>.286**</td>
<td>.239**</td>
<td>−.185**</td>
<td>.249**</td>
<td>.308**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Perceived Performance</td>
<td>.214**</td>
<td>.107*</td>
<td>−.072</td>
<td>.242**</td>
<td>.332**</td>
<td>.642**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note: (*) implies correlation is significant at the .05 level (2-tailed); (**) implies correlation is significant at the .01 level (2-tailed).

### TABLE 4. Path Model Estimation Results

<table>
<thead>
<tr>
<th>Direct Relationships</th>
<th>Std. Path Coeff.</th>
<th>T-Value</th>
<th>2-Tailed Sig. p&lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Orientation → Internet Utilization</td>
<td>γ11 .21</td>
<td>3.68</td>
<td>.002</td>
</tr>
<tr>
<td>Internal Locus of Control → Internet Utilization</td>
<td>γ12 .15</td>
<td>2.59</td>
<td>.01</td>
</tr>
<tr>
<td>Age → Internet Utilization</td>
<td>γ13 −.20</td>
<td>−3.97</td>
<td>.002</td>
</tr>
<tr>
<td>Sales Related Internet Training → Internet Utilization</td>
<td>γ14 .23</td>
<td>4.60</td>
<td>.002</td>
</tr>
<tr>
<td>Internet Utilization → Perceived Performance</td>
<td>β21 .64</td>
<td>15.31</td>
<td>.002</td>
</tr>
</tbody>
</table>
with their standardized path coefficients. As Table 4 and Figure 2 indicate, the analysis supported the hypothesized relationships that were tested. The next section discusses the results of this study.

**RESULTS**

The path-analytic model (see Figure 2) tested the relationships between 4 exogenous and 2 endogenous constructs depicted in the Sales Agent’s IUP model. A sales agent’s learning orientation related positively and significantly to sales related Internet utilization ($\gamma_{11} = .21, t = 3.68, p < .002$), supporting Hypothesis 1. The results indicate that, for sales agents who participated in this study, the personality trait learning orientation was related directly and positively to the extent to which they utilized the Internet for selling purposes. A positive and statistically significant path ($\gamma_{12} = .15, t = 2.59, p < .01$) between a sales agent’s internal locus of control orientation and Internet utilization suggested support for Hypothesis 2. For the sampled sales agents, then, the extent to which these agents perceived that they had control over future consequences influence positively the degree to which they utilized the Internet for selling purposes.
The path analysis also supported Hypothesis 3 which posited a direct and positive relationship between a sales agent’s age and Internet utilization ($\gamma_{13} = -0.20, t = -3.97, p < .002$). This result establishes that participating sales agents who were older did not utilize the Internet or utilized the Internet to a lesser extent in soliciting customers. The statistically significant positive path coefficient leading from sales related Internet training to Internet utilization ($\gamma_{14} = .23, t = 4.60, p < .002$) indicates support for Hypothesis 4. Among the sales agents who responded to the survey instrument, then, those that received more training in using the Internet for selling activities ended up utilizing the Internet to a greater extent than others.

Hypothesis 6, which posits a direct and positive relationship between a sales agent’s Internet utilization and perceived performance attributable to Internet use was also supported by the path analysis ($\gamma_{16} = .64, t = 15.31, p < .002$). This result implies that responding sales agents who utilized the Internet to a greater extent for selling activities also perceived higher improvements in sales performance.

The path model (see Figure 2) also indicates the relative influence of the various personality, demographic, and user-situational constructs (see Loehlin, 1992). For example, among the relationships tested, a user-situational variable, i.e., Internet related training, was most strongly related to Internet utilization ($\gamma_{14} = .23$) followed by a sales agent’s learning orientation, a personality trait ($\gamma_{11} = .21$). Also, the analysis found that the positive influence of Internet related training ($\gamma_{14} = .23$) was greater than the negative influence age ($\gamma_{13} = -.11$) had on Internet utilization. A meta-analysis by Alavi and Joachimsthaler (1992) came to a similar conclusion regarding the primacy of user-situational variables over other variables in the context of DSS implementation. In addition to the above findings, the results of the path analysis revealed that the four exogenous variables had statistically significant indirect relationships with perceived performance through their direct relationships with Internet utilization. The next section discusses implications that follow from the test of various relationships depicted in the Sales Agent’s IUP model.

**DISCUSSION AND IMPLICATIONS**

A direct implication of the findings in this study is that sales agents can enhance their sales performance by utilizing the Internet fully for
selling purposes. More specifically, sales agents who use Internet resources to prospect for, communicate with, and provide service to potential and current customers gain by building better relationships with their clients and this translates into enhanced sales for such sales agents. This implication that the Internet can be usefully utilized by sales agents stands in contrast to literature that suggests the possibility that sales agents may be disintermediated due to the Internet (e.g., Learner & Storper, 2001; Stead & Gilbert, 2001), or indicates that sales agents are fearful of being disintermediated due to the Internet (Gulati, Bristow, & Dou, in press). In other words, the findings of this study suggest that sales agents should view the Internet revolution as a positive development that can potentially advance their business goals.

The findings of this study regarding the influence of Internet related training on Internet utilization offer some enabling suggestions for sales agents who may be interested in utilizing the Internet more fully in their business operations. By participating in training related to the use of the Internet, and by providing such training to their salespeople, sales agents can increase the extent to which Internet resources are used in their firms to accomplish selling activities. This should have positive ramifications for sales agents in terms of increased sales and better customer service and support.

The finding that age is related negatively to Internet utilization, when taken in isolation, suggests that older sales agents have a harder time adjusting to the Internet age and are unlikely to use the Internet resources available. However, evidence in this study that training relates positively to Internet utilization suggests that, even for older sales agents, participation in Internet related training may reduce their doubts and hesitation and facilitate greater Internet utilization for selling activities by these agents. The relationship of training and age on Internet utilization of sales agents may also have some ramifications for the salespeople that work for these sales agents. Specifically, sales agents who want their salespeople to utilize Internet resources for selling activities should keep in mind that older salespeople may have a harder time accepting and adopting the Internet. Correspondingly, these older salespeople may require more input in the form of Internet related training so that they may overcome their reluctance to utilize the Internet to establish links with and provide service to prospects and customers.

Although the low reliability of the item-set that measured a sales agent’s non-sales related Internet experience precluded a formal test of the relationship between this construct and the sales agent’s Internet utilization, an exploratory path analysis that included this construct indi-
cated a positive, statistically significant relationship between the two constructs. A confirmation of this result with a more reliable measure of non-sales related Internet experience would imply that by recruiting salespeople that have some experience in using Internet resources, sales agents can further ensure that salespeople utilize the Internet resources to the fullest. Findings of this study regarding the influence of personality variables have additional implications for the recruitment of new salespeople. Sales agents should select salespeople with an internal locus of control and a learning orientation. Such salespeople could be expected to readily adopt the Internet as a tool for selling and providing service to customers.

LIMITATIONS AND FUTURE RESEARCH

Any conclusions regarding causal linkages in this study should be made with caution as this study utilized cross-sectional data to test proposed relationships. Also, the data was generated through self-reports, and therefore may be biased to an extent. This study utilized a list of sales agents belonging to one national manufacturer agents’ association. Although the selection of a random sample adds to the generalizability of the results, the conclusions of this study cannot be safely extended beyond the members of the agents’ association. Another limitation derives from the fact that some constructs in the Sales Agent’s IUP model have been conceptualized specifically for this study, and therefore do not have previously validated measures.

This study restricted itself to examining the influence of selected personality, demographic, and user-situational variables on the independent sales agent’s Internet utilization. Several personality traits such as self-efficacy, perceived behavioral control, and risk averseness, other demographic variables such as education, and certain user-situational variables such as involvement that have been linked in literature to new technology adoption and implementation either directly or indirectly (see Alavi & Joachimsthaler, 1992; Taylor & Todd, 1995; Venkatesh & Davis, 1996) were not included in the Sales Agent’s IUP model. The conceptual model tested in this study, therefore, was not comprehensive. The exclusion of certain variables from the model, however, does not negate any of the findings in this study. This study measured Internet related training in terms of the extent to which sales agents received such training; the quality of the training received was not measured here. Hence, the variable, Internet training, addressed only one
dimension of training. Conceivably, the quality of training imparted, as well as the receptivity of sales agents to such training, could also influence the degree to which Internet training is useful for sales agents.

One area for future research involves testing the influence of other antecedent variables on a sales agent’s Internet utilization. This may shed further light on the relative influence of different variables on Internet utilization and may identify other controllable variables that sales agents can use to better exploit this marketing channel to their advantage. In addition, we would encourage researchers to test the Sales Agent’s IUP and other plausible models on dependent variables such as sales agent’s efficiency and satisfaction. Finally, further validation of the constructs and relationships tested in this study is warranted.

This study concerns itself with examining the influence of Internet utilization on perceived sales performance. An extension of this study would involve testing for the influence of Internet utilization on a sales agent’s performance vis-à-vis their principals. We also encourage researchers to further replicate and extend the findings of this study. While the population of sales agents utilized for this study consisted of sales agents belonging to over 100 different industries, the participants did in fact represent a rather specialized type of professional salesperson and a select type of channel relationship. Future research can test the model proposed here on a more diversified sample of sales professionals.

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