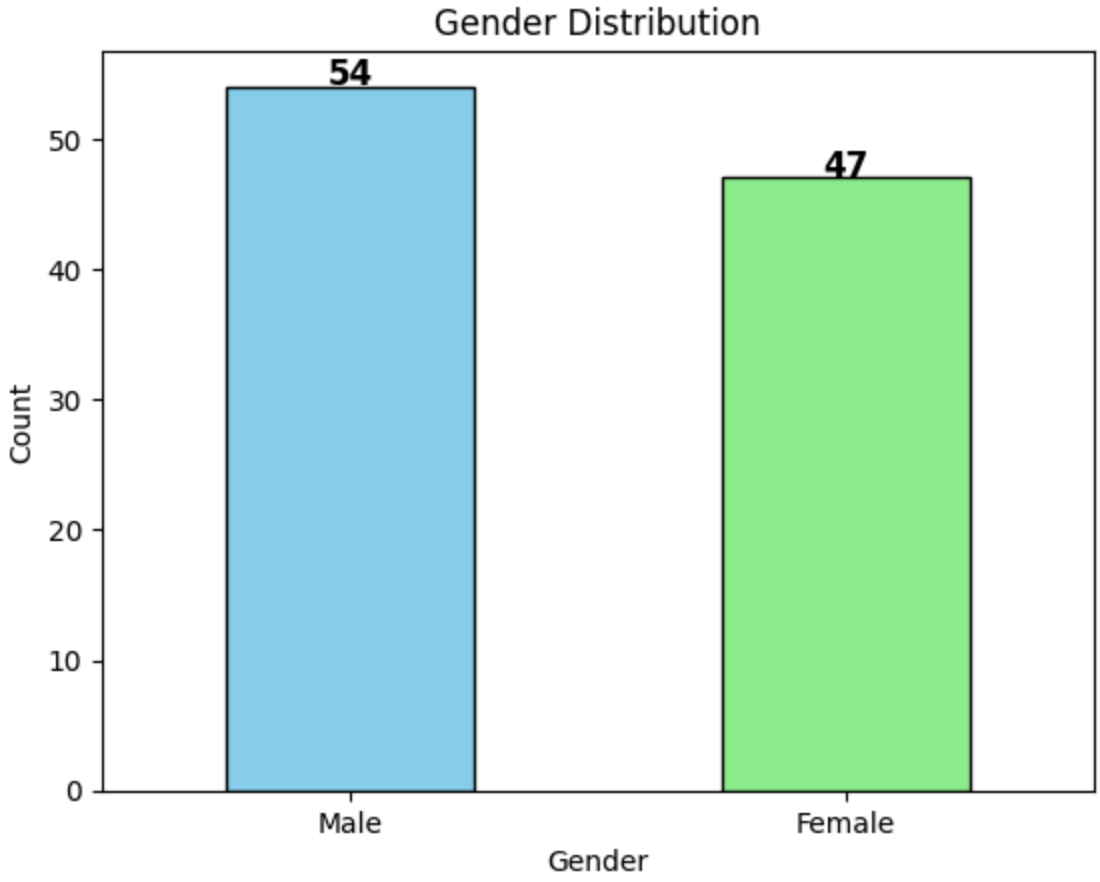
In [1]:
```
# Importing libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [2]:
```
# Reading the data
df = pd.read_excel('The_Future_of_HR.xlsx', engine = 'openpyxl')
```

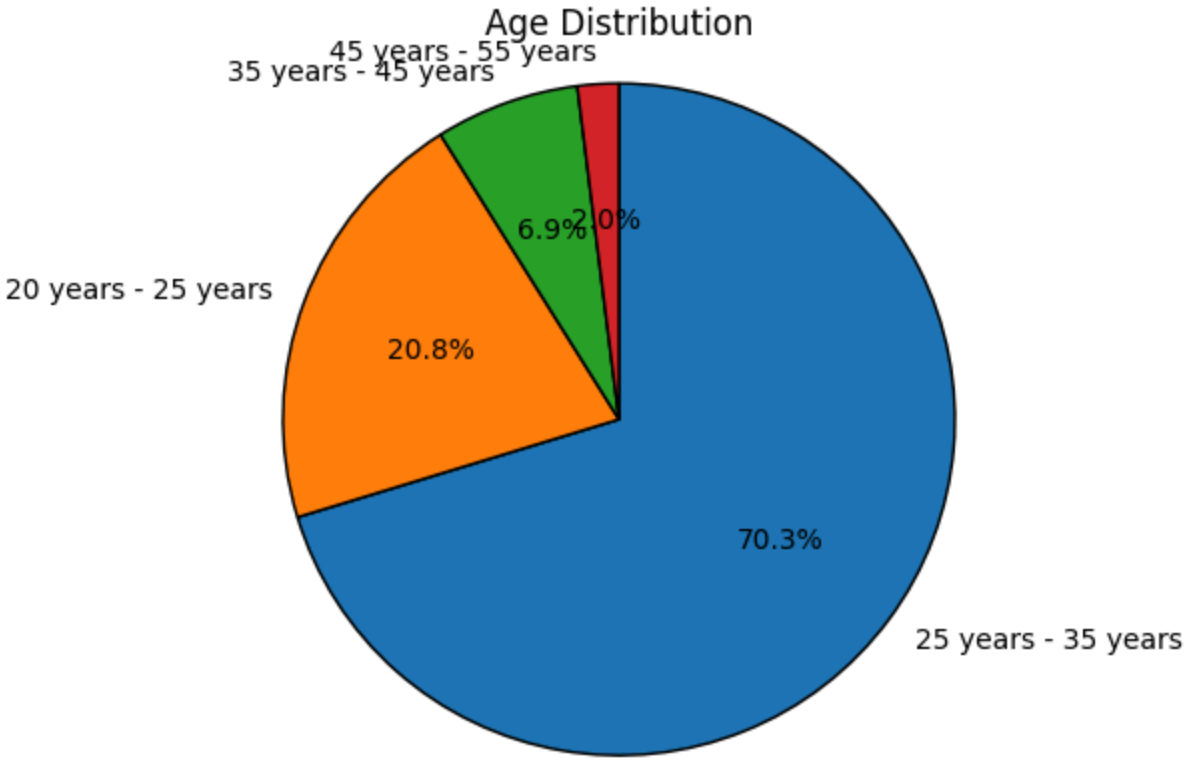
In [3]:
```
# shape of the data
df.shape
```

Out[3]:
```
(101, 19)
```

In [4]:
```
# Plot the bar chart
gender_counts = df['Gender'].value_counts()
ax = gender_counts.plot(kind='bar', color=['skyblue', 'lightgreen'], edgecolor='bla

# Customize the plot
plt.title('Gender Distribution')
plt.xlabel('Gender')
plt.ylabel('Count')
plt.xticks(rotation=0)  # Keep the labels horizontal

# Display counts on top of each bar
for i in ax.patches:
    ax.text(i.get_x() + i.get_width() / 2, i.get_height() + 0.1,
            str(int(i.get_height())),
            ha='center', fontsize=12, fontweight='bold', color='black')

# Show the plot
plt.show()
```



In [5]:
```
# Plot the pie chart
age_counts = df['Age'].value_counts()
ax = age_counts.plot(kind='pie', autopct=lambda p: f'{p:.1f}%', startangle=90, coun

# Customize the plot
plt.title('Age Distribution')
plt.ylabel('')  # Remove the default y-label
plt.axis('equal')  # Ensure pie is drawn as a circle

# Display the plot
plt.show()
```



Evaluate the effectiveness of AI-driven solutions in enhancing the efficiency and experience of employee onboarding.

To evaluate the effectiveness of AI-driven solutions in increasing the efficiency and experience of employee onboarding depend on several aspects such as:

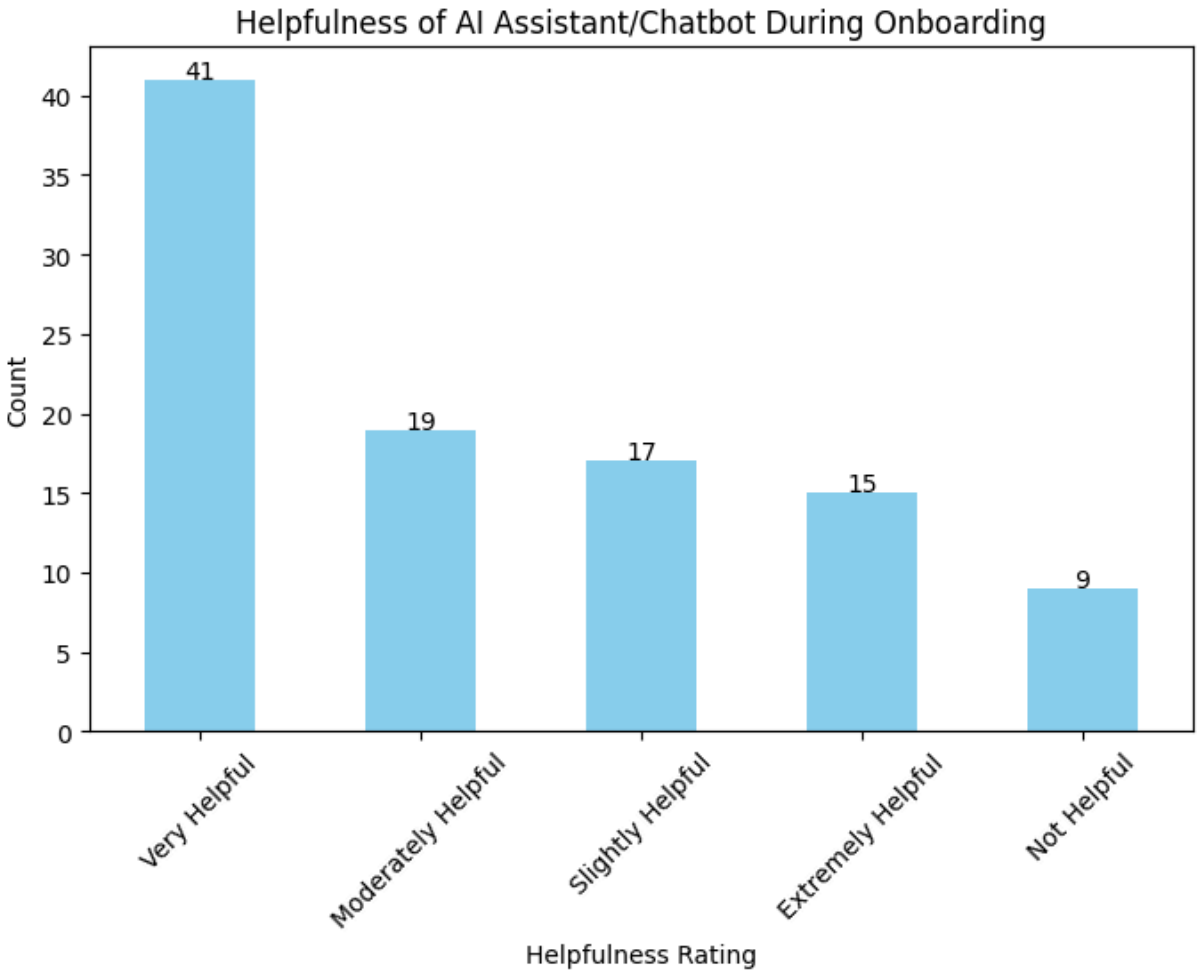
- **Satistaction with AI-Powered onboarding tools**
  - Ratings of AI-powered tools can be analyzed during the onboarding process that focus on the personalization of the experience.
- **Perception of AI-Driven vs. Traditional Training Method**
  - Analyze prefrences between traditional and AI-driven training method that provides employees attitudes towards modern onboarding techniques.
- **Role-Specific Adaptation and Relevance of Training Content**
  - The relevance of the training content to an employee's role is a key factor. This measurs how well the effectiveness of adaptive learning features with an employee's role.
- **Impact of AI on Confidence and Role-Preparedness**

    - It can analyzed how AI-driven training influences employees confidence in performing their roles.
- **AI interaction and overall experience rating**
    - The overall onboarding experience can be enhanced with these tools by comparing employees who have interacted with AI-powered tools and those who haven't.
- **Effectiveness of Adaptive Learning Features**
    - The adaptive learning features' effectiveness can be evaluated based on feedback from employees on how well these features aligned with their learning styles.
- **Satisfaction with AI Feedback Systems**
    - Analyzing how employees rate the AI feedback system's ability to help them understand their performance provides insight into the effectiveness of AI-driven assessments.

Satisfaction with AI-Powered Onboarding Tools

In [6]:
```
# Count the helpfulness ratings
helpfulness_counts = df['How helpful was the AI assistant/chatbot in answering your
print(helpfulness_counts)
# Plotting
plt.figure(figsize=(8, 5))
helpfulness_counts.plot(kind='bar', color='skyblue')
plt.title('Helpfulness of AI Assistant/Chatbot During Onboarding')
plt.xlabel('Helpfulness Rating')
plt.ylabel('Count')
plt.xticks(rotation=45)
for i, value in enumerate(helpfulness_counts):
    plt.text(i, value + 0.1, str(value), ha='center')
plt.show()
```

```
How helpful was the AI assistant/chatbot in answering your questions during onboardi
ng?
Very Helpful          41
Moderately Helpful    19
Slightly Helpful      17
Extremely Helpful     15
Not Helpful            9
Name: count, dtype: int64
```



Insights

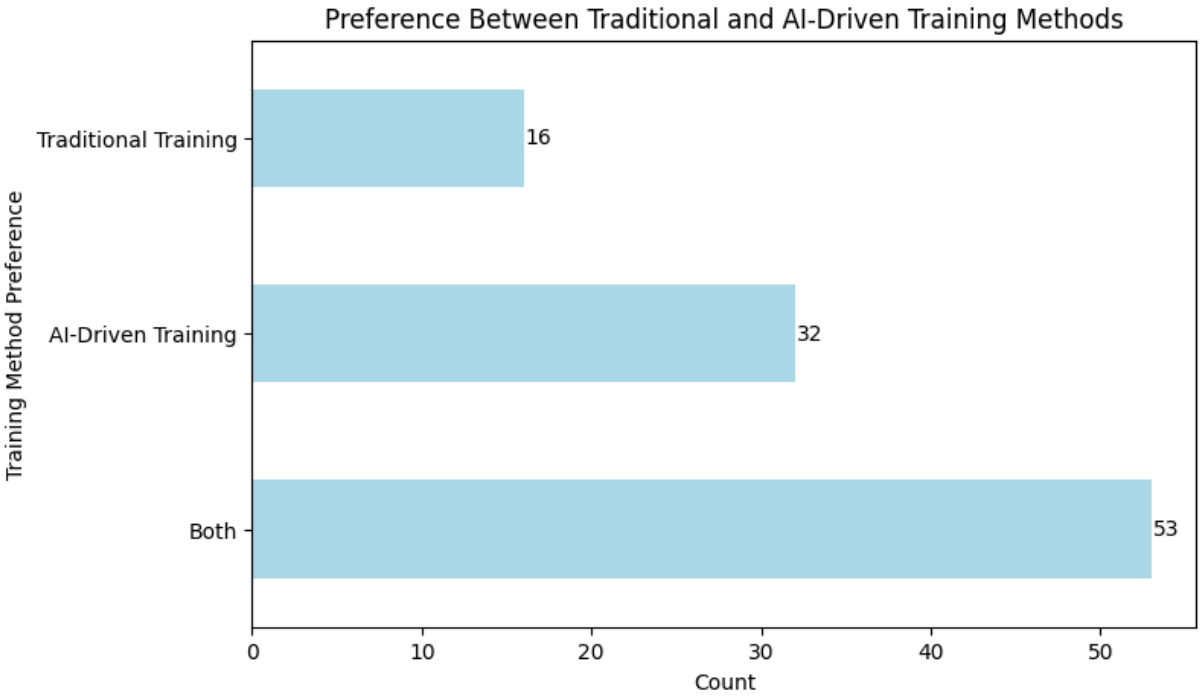
- **A significant number of employees fount AI assitants helpful during onboarding, with 41 employee rate as Very Helpful, 15 as extremely helpful. The reflects that AI-driven solutions are positively impacting the onboarding experience for many employee.**
- **9 employees do not find AI assistants helpful during onboarding which may need refinement with human-centric processes.**

Perception of AI-Driven vs. Traditional Training Methods

In [8]:
```
# Count the preferences
training_preference_counts = df['Do you prefer traditional training methods or AI-d
print(training_preference_counts)
# Plotting as a horizontal bar chart
plt.figure(figsize=(8, 5))
training_preference_counts.plot(kind='barh', color='lightblue')
plt.title('Preference Between Traditional and AI-Driven Training Methods')
plt.xlabel('Count')
plt.ylabel('Training Method Preference')
```

```
for i, value in enumerate(training_preference_counts):
    plt.text(value + 0.1, i, str(value), va='center')
plt.show()
```

```
Do you prefer traditional training methods or AI-driven, interactive training method
s?
Both                    53
AI-Driven Training      32
Traditional Training    16
Name: count, dtype: int64
```



Insights

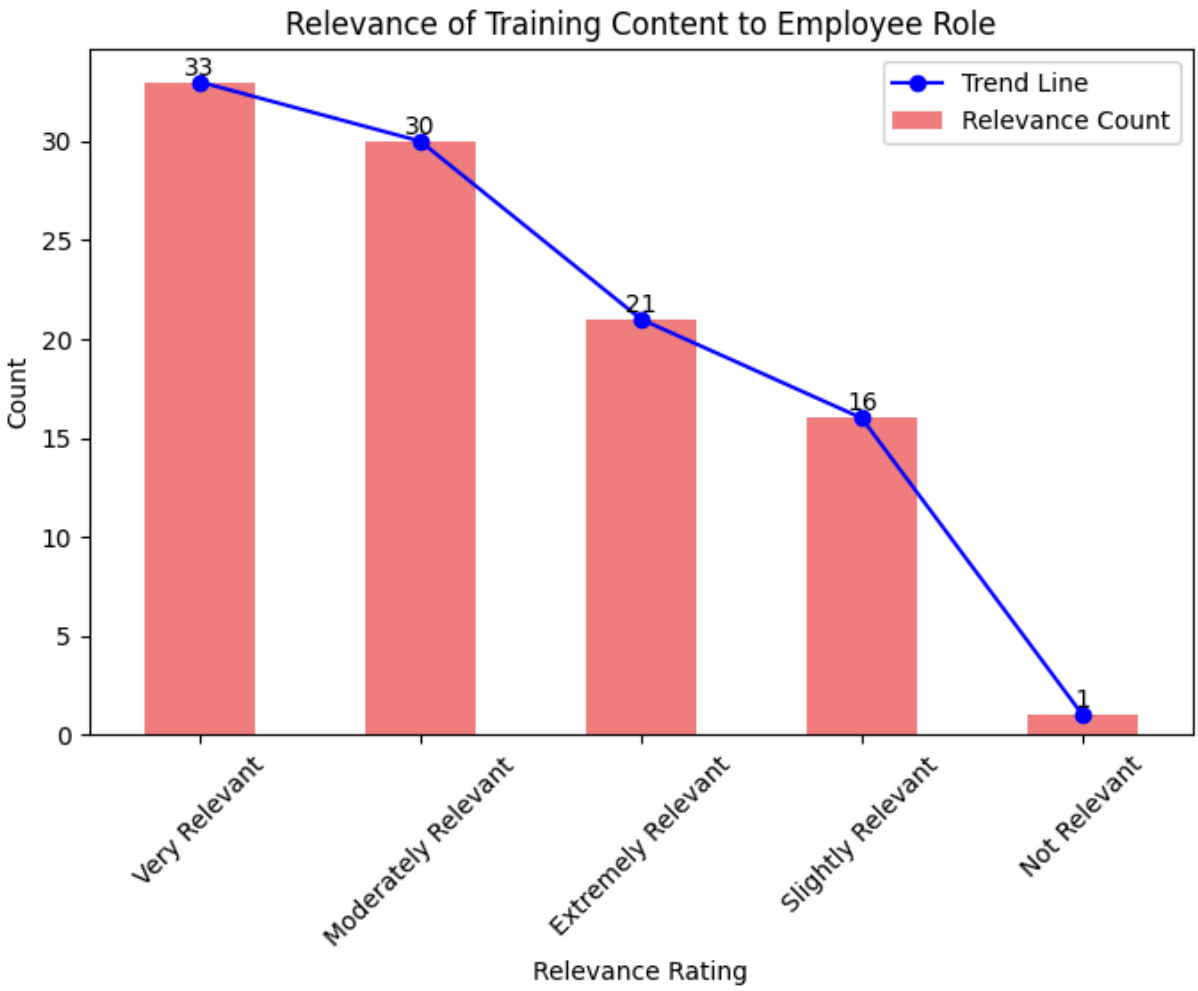
- **32 employees prefer AI-driven training methods which shows strong inclication towards leveraging AI for onboarding and suggesting AI-driven solutions are perceived as effective in enhancing the onboarding experience.**
- **53 employees preferes both traditional training and AI-driven training methods highlighting the importance of integrating AI solutions with traditional methods by creating the balanced and comprehensive onboarding experience.**

Role-Specific Adaptation and Relevance of Training Content

In [9]:
```
# Count the relevance ratings
relevance_counts = df['How relevant do you find the training content to your role?'
print(relevance_counts)
# Plotting
plt.figure(figsize=(8, 5))

# Plotting the bar chart
ax = relevance_counts.plot(
```

```
    kind='bar',
    color='lightcoral',
    label='Relevance Count'
)

# Adding a line plot on top of the bars
ax.plot(
    relevance_counts.index,
    relevance_counts.values,
    color='blue',
    marker='o',
    linestyle='-',
    label='Trend Line'
)

# Adding value labels on each bar
for patch in ax.patches:
    ax.text(patch.get_x() + patch.get_width() / 2, patch.get_height() + 0.1,
            str(int(patch.get_height())), ha='center', va='bottom')

# Customizing the plot
plt.title('Relevance of Training Content to Employee Role')
plt.xlabel('Relevance Rating')
plt.ylabel('Count')
plt.xticks(rotation=45)
plt.legend()  # Show the legend for both bar and line

plt.show()
```

```
How relevant do you find the training content to your role?
Very Relevant          33
Moderately Relevant    30
Extremely Relevant     21
Slightly Relevant      16
Not Relevant            1
Name: count, dtype: int64
```



Insights

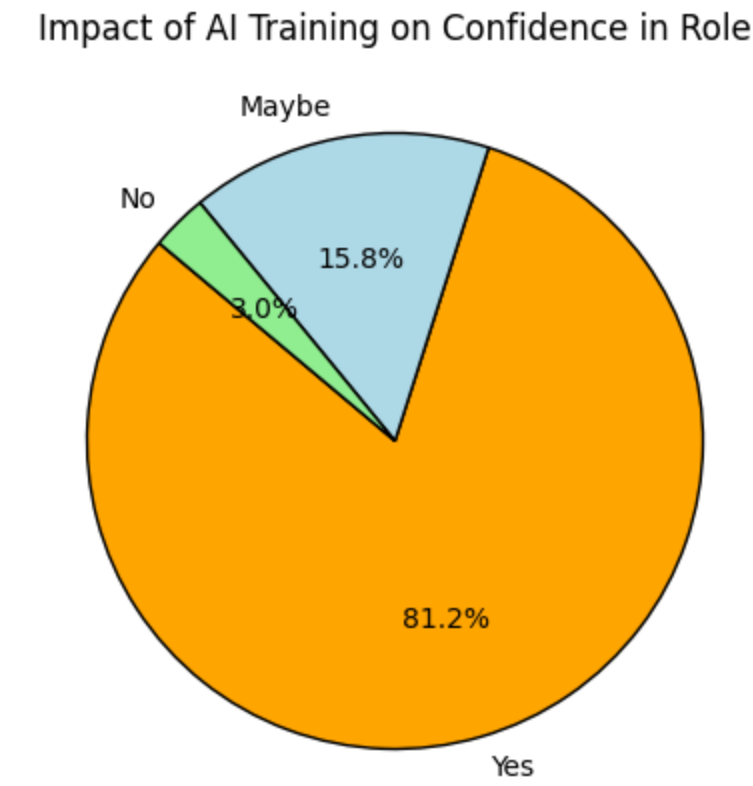
- **A significant number of employees found that the training content very relevant to their role suggesting AI-driven solutions are effectively tailoring training content to meet the specific need of employees that enhance their onboarding experience.**
- **While AI driven solutions are generally effective, there is still room for improvement to make the training content even more aligned with employee roles.**

Impact of AI on Confidence and Role-Preparedness

In [10]:
```
# Count the confidence ratings
confidence_counts = df['Has the AI training content helped you feel more confident
print(confidence_counts)
# Plotting a pie chart
plt.figure(figsize=(5,5))
plt.pie(
    confidence_counts,
    labels=confidence_counts.index,
    autopct='%1.1f%%',
```

```
    colors=[
        'orange',
        'lightblue',
        'lightgreen'
    ],
    startangle=140,
    wedgeprops={
        'edgecolor': 'black'
    }
)

# Adding a title
plt.title('Impact of AI Training on Confidence in Role')

# Displaying the chart
plt.show()
```

```
Has the AI training content helped you feel more confident in your role?
Yes      82
Maybe    16
No        3
Name: count, dtype: int64
```



Insights

- **AI training positively impacted their confidence in their roles suggesting AI driven solutions are highly effective in boosting employee confidence during the onboarding process.**

AI Interaction and Overall Experience Rating

In [11]:
```
# Group by AI interaction and experience rating
interaction_experience = df.groupby('Have you interacted with any AI-powered tools
print(interaction_experience)

# Plotting a grouped bar plot
interaction_experience.plot(
    kind='bar',
    figsize=(10, 6),
    color=['lightblue', 'lightgreen', 'lightcoral', 'orange'],
    width=0.8
)
plt.title('Overall Onboarding Experience by AI Interaction')
plt.xlabel('Interacted with AI-Powered Tools')
plt.ylabel('Count')
plt.xticks(rotation=0)
plt.legend(title='Onboarding Experience', bbox_to_anchor=(1.05, 1), loc='upper left
plt.show()
```

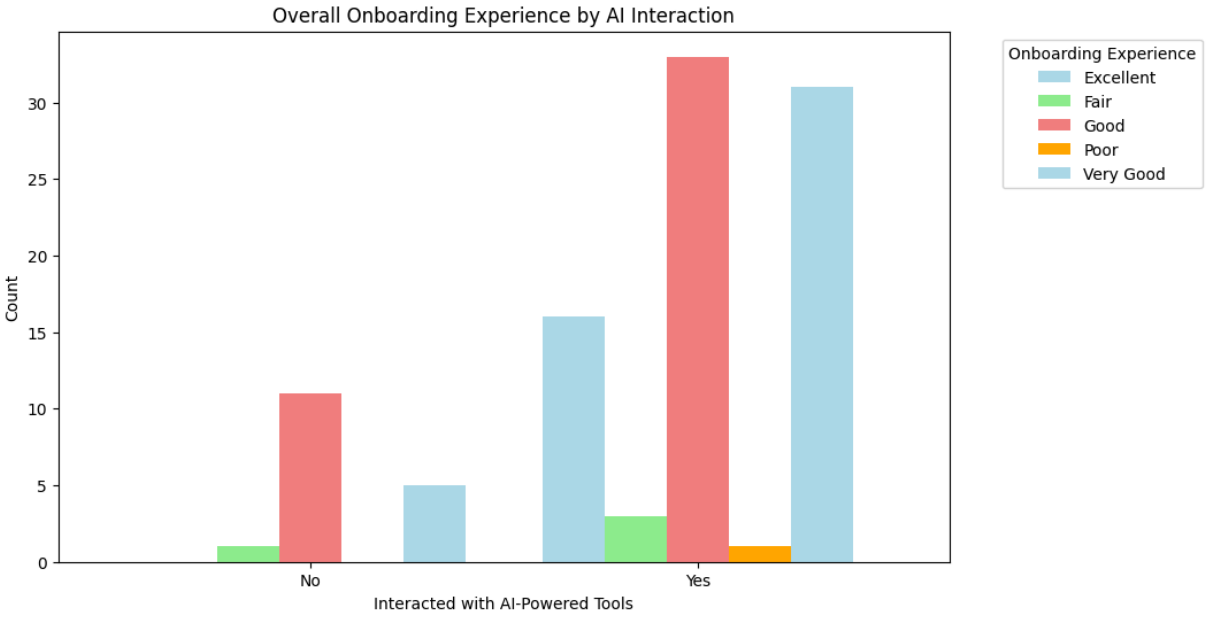
How would you rate your overall onboarding experience?
(Onboarding experience refers to the process of welcoming and integrating new employees into a company. It includes providing login credentials, access to tools, and information about the company's structure, goals, and culture.) Excellent \
Have you interacted with any AI-powered tools d...
No
0.0
Yes
16.0

How would you rate your overall onboarding experience?
(Onboarding experience refers to the process of welcoming and integrating new employees into a company. It includes providing login credentials, access to tools, and information about the company's structure, goals, and culture.) Fair \
Have you interacted with any AI-powered tools d...
No
1.0
Yes
3.0

How would you rate your overall onboarding experience?
(Onboarding experience refers to the process of welcoming and integrating new employees into a company. It includes providing login credentials, access to tools, and information about the company's structure, goals, and culture.) Good \
Have you interacted with any AI-powered tools d...
No
11.0
Yes
33.0

How would you rate your overall onboarding experience?
(Onboarding experience refers to the process of welcoming and integrating new employees into a company. It includes providing login credentials, access to tools, and information about the company's structure, goals, and culture.) Poor \
Have you interacted with any AI-powered tools d...
No
0.0
Yes
1.0

How would you rate your overall onboarding experience?
(Onboarding experience refers to the process of welcoming and integrating new employees into a company. It includes providing login credentials, access to tools, and information about the company's structure, goals, and culture.) Very Good
Have you interacted with any AI-powered tools d...
No
5.0
Yes
31.0



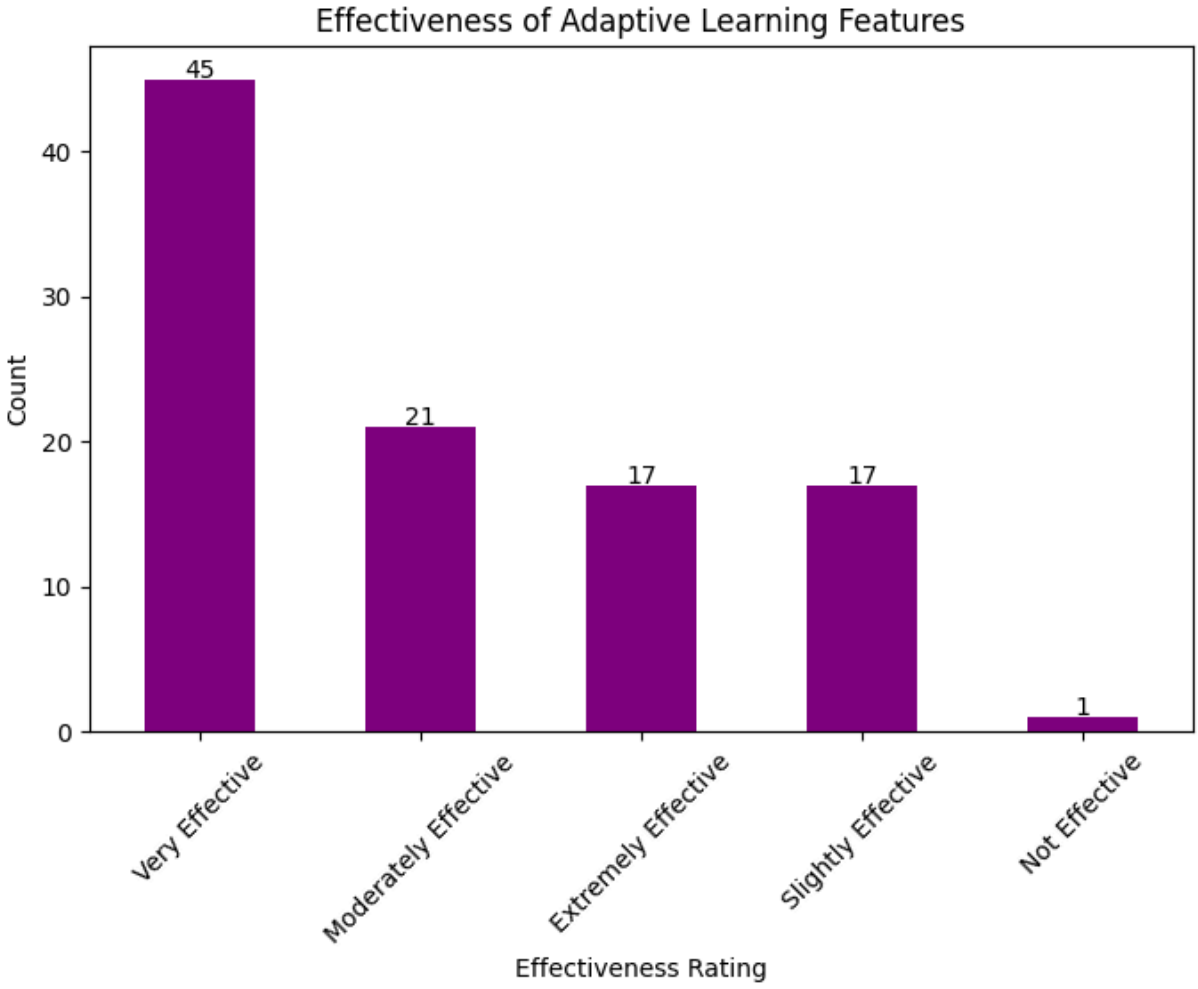
Insights

- **The count of positive experiences are high for those employees who interacted with AI-powered tools gives the feedback for better onboarding experience compared to those who dit not.**
- **Overall onboarding process can be enhanced by AI-driven solutions by providing more personalized and efficient support.**

Effectiveness of Adaptive Learning Features

In [13]:
```
# Count the effectiveness ratings
effectiveness_counts = df['How effective do you find the adaptive learning features
print(effectiveness_counts)

# Plotting
plt.figure(figsize=(8, 5))
effectiveness_counts.plot(
    kind='bar',
    color='purple'
)

plt.title('Effectiveness of Adaptive Learning Features')
plt.xlabel('Effectiveness Rating')
plt.ylabel('Count')
plt.xticks(rotation=45)
for i, value in enumerate(effectiveness_counts):
    plt.text(i, value + 0.1, str(value), ha='center')
plt.show()
```

```
How effective do you find the adaptive learning features in your training?
Very Effective          45
Moderately Effective    21
Extremely Effective     17
Slightly Effective      17
Not Effective            1
Name: count, dtype: int64
```



Insights

- **AI-driven solutions are highly effective in enhancing the onboarding process by providing personalized and adaptive learning experiences.**
- **Most employees perceive AI-driven solutions as beneficial, though there is still a need for improvement to achieve even higher effectiveness.**

Satisfaction with AI Feedback Systems

In [15]:
```
# Count the satisfaction ratings
satisfaction_counts = df['How satisfied are you with the AI tools used in your onbo
print(satisfaction_counts)

# Convert the index and values to lists for easier plotting
ratings = satisfaction_counts.index.tolist()
```

```
counts = satisfaction_counts.values.tolist()

# Plotting using Seaborn
plt.figure(figsize=(10, 6))
sns.scatterplot(
    x=ratings,
    y=counts,
    size=counts,
    sizes=(200, 1500),
    color='lightblue',
    alpha=0.7,
    edgecolor='black',
    legend=False
)

# Add annotations for each bubble
for i, count in enumerate(counts):
    plt.text(
        x=ratings[i],
        y=counts[i] + 0.3,
        s=str(count),
        ha='center',
        va='center',
        fontsize=12,
        fontweight='bold',
        color='darkblue'
    )

# Adding title and labels with improved aesthetics
plt.title(
    'Satisfaction with AI Tools in Onboarding and Training',
    fontsize=16,
    fontweight='bold',
    pad=20
)

plt.xlabel('Satisfaction Rating', fontsize=14)
plt.ylabel('Count', fontsize=14)
plt.xticks(rotation=45, fontsize=12, fontweight='medium')
plt.yticks(fontsize=12)
plt.grid(True, linestyle='--', alpha=0.3)

# Add a light background style
sns.set_style("whitegrid")

# Display the plot
plt.tight_layout()
plt.show()
```

```
How satisfied are you with the AI tools used in your onboarding and training?
Satisfied           52
Very Satisfied      25
Neutral             23
Very Dissatisfied    1
Name: count, dtype: int64
```

Insights

- **Most of the employees are satisfied with AI tools used in onboarding and training suggesting AI driven solutions are generally well-received and effective in imporving the onboarding experience.**
- **While many employees find AI tools beneficial, there is still a portion of the workforce that may not see a significant impact or have mixed feelings about their effectiveness.**

In [ ]: